OPEN ACCESS JOURNALS IN HUMANITIES AND SOCIAL SCIENCE

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for the humanities and social sciences

Open access journals in Humanities and Social Science

A British Academy Research Project

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Open access journals in Humanities and Social Science, published 2014 by the British Academy

Introduction

- This British Academy research project on the effects of current UK open access policies was funded by the Higher Education Funding Council for England (HEFCE) and was overseen by a Steering Committee set up by the Academy to manage the project. The project was led by Professor Chris Wickham, FBA (British Academy Vice-President, Publications), with support and co-writing from Dr Rebecca Darley and Dr Daniel Reynolds. It investigates some of the issues involved in open access publishing, seeking to examine various practical issues and difficulties that may arise, using the example of twelve disciplines across the Humanities and Social Sciences (HSS). The key issues investigated were:
    - the degree to which non-UK journals are 'compliant' with current UK open-access policies, particularly 'green' open-access policies;
    - the differences between journal half-lives across the same disciplines;
    - library acquisition policies and the degree to which these are affected by embargoes before articles are openly available.
- There are separate ethical, financial and practical arguments in favour of developing open-access provision. At the same time, various difficulties have been identified in practice, focussing on undesired consequences of the desired aims. These include:
    - the possible failure of journals which cannot adapt their business models to an open-access landscape;
    - the resultant reduction in outlets available in which to publish;
    - the possible weakening of the research support ecosystem associated with learned societies, especially in the UK;
    - barriers to publishing abroad, which result in the undermining of the international standing of UK research.
- This report looks at which risks might in practice hinder the process and expansion of open access as it is currently proposed. It focuses above all on 'green' open access policies (that is to say, the posting of post-peer-review author-accepted manuscripts, on the internet in University repositories, after embargo periods).[1] The report concludes that 'gold' open access (the instant availability of publishers' versions of articles on the internet in return for payment) is going to be of marginal importance in HSS.

- The most serious risk that is confirmed by the research done for this report is that, in some disciplines at least, UK open-access policies, if followed too rigidly, will undermine the international reach and thus standing of the country's research.

Report findings

1. Patterns of publication

- The patterns of submission to the 2008 Research Assessment Exercise (RAE) show wide differences. In particular, monographs are important in most of the Humanities and much less in many of the Social Sciences; and journal articles are overwhelmingly dominant in some of the Social Sciences, notably Economics, Geography and Psychology, whereas they are of minor importance in Art and Design.
- 44% of all journal articles submitted to the RAE in 2008 in these disciplines were published in non-UK journals (overwhelmingly in the USA and Europe), so the decisions of non-UK actors about open access must be recognised to be highly relevant to the UK debate. Conversely, 67% of all submitted journal articles, across all twelve disciplines, whether in UK or non-UK journals, were published by only seven multinational publishers.

2. Non-UK journal publishing and Research Councils UK (RCUK) open-access rules

- Selected non-UK journals in the USA and Europe were analysed in terms of their current (2013) 'compliance' with RCUK green open-access rules for HSS, which currently allow a 24-month embargo period for author-accepted manuscripts, if the journal concerned also accepts articles by the gold route. The journals concerned have a very wide range of levels of awareness of the open-access agenda, from total ignorance to full 'compliance'.
- The disciplines studied for this Report fell into three groups:
    - in Economics, Geography and Psychology, current non-UK 'compliance' with RCUK rules is in general very high, over 75% for the most part. This group may also include Sociology, but our evidence for it is less robust.

  - in a second group, including History, Archaeology, Philosophy, Politics and Drama, documented 'compliance' is lower, at between 50 and 67%, but our contextual data lead us to predict that 50% is a likely maximum overall.
  - in a third group, English and Modern Languages, to which we believe we could add Music and Art History, the levels of 'compliance' of the most popular non-UK journals are between 20% and 40%, and the lower figure is by far the most likely.
- HEFCE has in its consultation for the rules of the next REF, the research assessment exercise due probably in 2020, suggested a set of protocols for both UK and non-UK journal publishing which are likely to make compliance possible if the present pattern of journal submission continues.
- The current rules for RCUK grant-funded publication, by contrast, at present make non-UK journal publishing in the Humanities as a whole very difficult, and in literature/art/music-based disciplines almost impossible. This has serious dangers for the international standing of UK research in the Humanities, and we urge that these figures be properly taken into account in RCUK's 2014 independent review.

3. Journal half-lives

- The project analysed usage (download-based) half-lives for eleven of our twelve disciplines, to see if there are differences between the average lengths of time that journal articles remain in use in each discipline. If there were, this might justify different 'green' embargo periods for each.
- The global figures for journals published by six major publishers and provided for us by the publishers concerned, 1108 journals in all, show that usage half-lives do not vary very widely across HSS disciplines. The highest discipline figure was 56 months, the lowest 37, and most were between 40 and 50 months.
- We asked JSTOR, a major archive-based content-provider, to do a similar analysis. The half-lives for the JSTOR journals, although not directly comparable, are far higher, with an average of 20 years, which shows that archive availability can make journal usage stay current for much longer. They do not vary between discipline, however, any more

than publishers' usage half-lives do, so we concluded that we had no grounds for arguing for major disciplinary differences in usage across the studied fields in HSS.

- A recent parallel study by Philip Davis, which covered Medical and Physical Sciences (the STEM disciplines) as well as HSS, allowed us to make comparisons outside HSS as to half-lives. His figures for HSS are broadly comparable to ours; but it is striking that the same is true for the Physical Sciences, particularly Physics and Mathematics – although not Medicine, where usage half-lives are rather shorter (24–36 months).
- We conclude that a 1:2 differentiation between 'green' embargo periods for author-accepted manuscripts in STEM and HSS, such as the 12 months and 24 months temporarily accepted by RCUK and also, for a longer period, by HEFCE, is justified by these half-life distinctions. But the boundary does not lie between STEM and HSS; rather, it lies between HSS plus Physical Sciences on one side and Medicine on the other.
- Although embargo periods do not map onto usage half-lives very closely, there is little need to be preoccupied by reducing embargo periods to 12 and even 6 months if usage half-lives even for Medicine are over 24 months. We see no reason to change in the future the embargo periods which RCUK currently accepts.

4. Library acquisition policies and the cost of publishing

- The project found that libraries for the most part thought that embargoes for author-accepted manuscripts had little effect on their acquisition policies, although there is evidence that 6-month embargo periods might have such an effect. Academics are not consistent in their posting of manuscripts, and libraries find that journals do not have high enough, or regular enough, percentages of such manuscripts posted to justify cancellations of journals.
- As long as embargoes remain at 24 months for HSS journals, green open access will probably not have much effect on the buying of journals by libraries. What will have that effect, however, has been and will continue to be the rising cost of journals at a time of budgetary constraint for libraries. If that continues, journals will be cancelled anyway, whether posted manuscripts are available or not.

- Journal publishing cannot be made to be free of cost. If journals are popular, they have to employ people to run them, and costs become considerable immediately. There are important incentive and budgetary issues here. But at its heart the question is an ethical one: who should bear that cost? The author, the consumer and the community, as alternative bearers of that cost, all have their attractions, problems and contradictions. The result, however, is likely to be a compromise in all cases.
- If journal prices are unsustainable in library budgets, then there either have to be fewer journals or else journals have to be cheaper. These are pressures which are independent of any open-access policy. Since journals and thus publishers will continue to exist, debate and policy will have to recognise the core relationship between libraries and publishers.
- The core relationship between libraries and publishers should not be based on asymmetric information. Given that the size of library budgets is information which is publicly available, publishers, too, need to make their pricing structures and profit margins transparent to library buyers.

Notes

1 These and other technical terms are explained in the report.

1. Introduction and context

Open access journals in Humanities and Social Science, published 2014 by the British Academy

Background arguments

The possibility of open access is entirely a product of the electronic age. When journals (and other forms of publication) were only available as printed text, it occurred to very few people that they might be free to all users. But when we find ourselves in a world in which the internet gives us access to knowledge of all kinds, the idea has become possible that we might – for some people, should – be able to get more of that knowledge without payment. Sales of standard reference works have dropped dramatically in the face of freely-available sources such as Wikipedia, which has become a regular resource even for people who systematically doubt its reliability. Humanities researchers routinely skim the partially-available texts in Google Books, hoping that the reference they need is available without having to go into the library. Whether we are in favour of full open access or uneasy about it, if the PDF of a journal article we need is freely available online we breathe a sigh of relief. The desirability of open access to knowledge is indeed very widely accepted, even among people who do not at all believe that it is practicable. To that extent, therefore, the principle of open access has already won very general assent – outside the University sector, in fact, even more fully than inside it. But so have the principles of democracy, human equality, the end of poverty, and (among scientists) the need to counter climate change, without humans reaching agreed methods of achieving them. Obviously, the open access debate is far from their league in importance; but it presents some of the same problems. We need to confront the practical obstacles to open access as systematically as we can, so that their nature can be understood, instead of (as is often the case, particularly in the blogosphere) denied; only if we recognise them can they be countered, and, if possible and necessary, overcome. This Report aims to contribute to that.

The open access debate has been going on for over a decade by now.[1] In it, there are three main strands of argument in favour of open access: ethical, financial and practical. The ethical argument is simply that knowledge should be freely available. That used to mean 'available in public and University libraries'; now it means 'available to anyone who has access to the internet'. This greatly extends the proportion of knowledge which

might in principle be made available, for no library could ever afford all the journals in the world – journals being the major focus of the debate. It also extends the audience for that knowledge: for, in the world of print, only a few countries had access to more than tiny proportions of what was published; but now most countries, at least in the northern half of the globe, have at least some access to the net. The ethical argument has been given a sharper edge in the last couple of years in the UK by strong support from the Minister for Universities and Science, David Willetts, and from the Higher Education Funding Council for England (HEFCE) and its sister councils in the rest of the UK, who have added the proposition that, if research is paid for out of public funds, including from the Quality Related (QR) funding which comes to all UK Universities after the research assessment exercises (RAE/REF),[2] it should be made open to all. This is not an argument which in practice covers all research by any means (very many US Universities are not public, and much research funding comes from private trusts and companies; other research is self-funded, carried out by researchers in circumstances where there is no QR grant), but it now frames the debate in the UK. HEFCE has announced that, with some (quite extensive) exceptions, all journal articles for the next REF, probably in 2020, will need to be published with an open access provision.[3]

The financial argument is simply that there are so many journals now, and some journals (especially in the sciences) are so eye-wateringly expensive, that libraries can no longer afford them. Even if the numbers of journals had not expanded, their prices have. Between 1985 and 2005 in the USA, when inflation increased by 68%, the average institutional price of journals increased by 302%;[4] this disparity has been fully matched in the UK, and it continues in a period of financial stringency for Universities, when library budgets have been systematically cut. Publishers are perceived by many to make excessive profits on the back of the purchase by libraries of journals which, in many cases, researchers cannot do without. Something has to give; and maybe that something is paying for journals at all. Librarians in all countries are therefore among the keenest advocates of open access. Whatever happens here, the solutions to the debate need to help to counter this financial crisis (see Chapters 5 and 6).

The practical side of the case has been of primary importance to Medical and Bio-science and (to a lesser extent) Physical Science (the so-called STEM disciplines – Science, Technology, Engineering and Mathematics). Researchers in these fields argue that new knowledge and large-scale data-sets are developing so rapidly that only search engines can keep track of them, and that articles and data-sets therefore need to be openly available so that they can be mined for the meta-analyses which are the only way for scientists to keep track of knowledge and advance it constructively.[5] For this reason, the seven Research Councils of the UK (RCUK) have asked that open access publications should result from their grants since 2005,[6] although it was not until 2012 that they sought, outside Medicine, to enforce this. It is important to stress the existence of this argument when discussing the question of open access in the Humanities and Social Science (HSS) sector, which represents just under half (48%) of UK academics[7] and which is the remit of the British Academy, because such a need is not strongly felt among most HSS disciplines (one partial exception is Psychology). The making available of data-sets in any form is something which conveys little to most of them either, for it is not a major component of HSS publishing, particularly not in Humanities – Social Science uses (and shares) data-sets more. UK policy-makers need to recognise this difference when they make rules for non-STEM disciplines, and sometimes they have not. HSS academics equally, however, need to understand the force of this practical argument inside sectors of the STEM disciplines, and the commitment of many scientists to it. A combination of the growing sophistication of search engines, the financial crisis of libraries, and the fact that the ethical argument is backed by government, constitutes a strong alliance in favour of a radical open access policy.

RCUK is not alone in the world of research grants in pushing for open access publication. The current US Administration has asked public-sector US grant-giving bodies to require it, following the example of the National Institute of Health. The European Research Council (ERC) has done the same, matching not only RCUK but also several other national grant-giving bodies, for example in Germany and Austria.[8] They have asked for open access in different forms from those preferred by RCUK, but they require it nonetheless. Only in the UK, however, is this requirement

backed by government to the extent that all academics are potentially affected by it, whether they receive public grants for their research or not. This is particularly relevant in HSS, for the majority of research in HSS disciplines is not grant-supported (only some 10% of RCUK research funding currently goes to the 50% of academics in this sector; only 1% of ERC funding went to HSS in the years 2007–13).[9] Put another way, this means that medical and natural scientists, who rely on grants to fund their research, and publish overwhelmingly in journal articles, will henceforth have to publish their research in open-access forms in most of the countries which currently dominate research. (As just noted, many of these scientists – although, it is important to add, not all[10] – will indeed welcome this.) Most academics in the Humanities and Social Sciences, whose research is not substantially grant-funded, will however not have to publish in this way; except in the UK.

The arguments against the open access policies which are currently posed in the UK have been for the most part practical.[11] Many of them are focussed on the preference of RCUK for 'gold' open access publication, which has seemed both expensive and discriminatory, as well as out of line with the requirements of research funders outside the UK. This will be discussed in the next section. It was also not initially clear in the debates of the last two years, 2012–13, whether open-access requirements would be extended to monographs, scholarly editions and non-journal essay collections, which constitute a substantial percentage, often the majority, of publications in most HSS disciplines (exceptions include Economics and Psychology: see Chapter 3). The ethical argument for open access obviously would include monograph publication, even though the other arguments for it (financial and practical) do not. This alarmed many, for there is very little tradition of publishing monographs in electronic form; and, although moves to do so are gaining speed, as yet no business model exists for doing so in any open access form on more than a tiny scale.[12] RCUK and HEFCE however made it clear during 2013 that monographs are excluded from their current plans, and this Report as a result does not consider them.[13]

The other practical (and financial) argument against current open access policies focusses on the effects of such policies on journals themselves. Both

'gold' and 'green' models for open access publication (see below) contain dangers for the current ecosystem of journal publication. If 'green' embargo periods, after which journal articles are to be freely available, are too short, journals risk financial failure, for the incentive for libraries to buy them will be much reduced. Very many journals entirely lack business models to cope with this, if indeed such models exist, and risk having to close. This danger is seen by many as particularly serious for HSS journals, in which journal articles have been argued to have longer 'half-lives' than in many STEM disciplines (for a definition of half-life, see Chapter 4); the need to have journals freely available after a few months, so that science can move on as fast as possible (an argument canvassed with some force in Bio-sciences[14]) is unnecessary in most of HSS, and short embargoes based on this need would potentially have a devastating effect on HSS journals. In addition, many journals, and many of the most rigorously peer-reviewed journals, are owned by learned societies, whether these are national bodies such as the Royal Society of Chemistry, the Society of Antiquaries of London or the British Sociological Association and their equivalents abroad (particularly in the USA), or smaller but no less active bodies such as the Social History Society, the Society for Dance Research, or the Design and Technology Association. Many of these societies rely on the surplus from journal publication to support research projects and academic conferences and give grants to early career scholars, which makes them a major part of the research ecosystem in the UK. If open access undermined journal business models, that surplus, too, would no longer be available.

An over-enthusiastic set of rules for open access publication therefore offers two major risks. First, that the range of journals available for scholars to publish in might be dramatically reduced; and, second, that much of the current research support to scholars (particularly early career scholars), beyond that offered by Research Councils and Universities themselves, might be compromised. Furthermore, if these rules blocked UK submissions to journals which did not offer open access publication, then the ability of UK researchers to publish abroad, in countries where there is less of a move to open access, would also be compromised. This would result in another dramatic effect, on the international research standing of UK research itself.[15]

These are, as we have already noted, practical, not ethical, objections. We will come back to other aspects of the case for open access in Chapter 6. The debate over them in the last year has been extensive and often fierce; it is enough to cite the very large number of submissions to two Parliamentary Committees in 2013 on the subject, and the British Academy's own essay-collection, *Debating Open Access*, which is so far the only targeted UK publication to give space to (almost) all sides of the debate.[16] This debate has, however, been conducted in large part without any empirical data, on any side, about some of the most crucial issues. This will be set out in more detail in the next section; but the purpose of this Report is to provide better evidence about some of these issues, so that the debate, which is certain to continue, can be pursued on the basis of more data, and fewer unsubstantiated assertions.

* * *

The developments in the UK open access debate in 2012–13: a brief survey

For most academics in HSS, the open access debate came to their attention for the first time with the publication of the Finch report on expanding access to published research findings, which had been commissioned by the UK government in 2011, and came out in June 2012.[17] The Finch report concentrated above all on gold open access, which provides instant unrestricted access to publishers' final versions of articles. Gold open access is frequently (even if not always) financed through the payment of a fee by the author or his/her institution or research funder, called an article processing charge (APC). The charge is necessary to reimburse publishers for making their content available free. The report paid almost no attention to the alternative model for open access, green, which involves the right of authors to post versions of their articles in open-to-all University or subject repositories, usually (even if not always) after an embargo period which is needed to protect publishers' business models. It should be noted that green open access can mean the availability of the publisher's final version in a repository after the embargo period, but it can also simply mean the availability of the journal-accepted version of the author's manuscript,

after peer review but before editing and formatting. (This is increasingly called an 'author-accepted manuscript', AAM.) The latter is far commoner than the former. See further Chapter 3.[18]

Events in the year following June 2012 were complex and fast-moving, and can only be summarised here. The Minister for Universities and Science accepted the Finch report at once, and so did RCUK, which soon issued a set of guidelines for research published with Research Council grants which went well beyond Finch's recommendations, and laid almost exclusive stress on APCs for gold access.[19] Much discussion and criticism followed over the next nine months of RCUK's stance on this matter, including from the British Academy, from other national bodies, from learned societies, and, eventually, from the Committee on Science and Technology of the House of Lords. Differences with the Minister and with HEFCE, whose own guidelines were distinct, also emerged.[20] Unlike RCUK, HEFCE launched a double consultation exercise about how to incorporate open access into REF2020, which concluded at the end of 2013.[21] In April 2013, the House of Commons Business, Innovation and Skills Select Committee also held hearings on open access. The submissions to the Committees of each of the Lords and the Commons, from 75 individuals or bodies for the former and 98 for the latter, run in total to over 950 pages, and are now the best data-base for the diversity of reactions to the question.[22] By April, however, RCUK issued a revised statement which took account of some of this criticism, and also announced its own consultation, which is to be carried out by an independent body in 2014.[23] By now, RCUK recognised that much open access would be green and not gold, and it gave more space to green as a result. Furthermore, the embargo periods RCUK allowed for green open access had become longer, at least for an initial five years and in certain situations, extending to 12 months for STEM subjects and 24 months for HSS.

The detail of the debates in this period does not need to be rehearsed here. The British Academy's own views are public, and so, thanks to the parliamentary evidence, are those of a host of other organisations. The Academy summarised many of them in its own *Debating Open Access*, which came out in July 2013.[24] It is important to stress here, however, that

one of the key elements was the increasing acceptance that gold open access, although increasingly common in STEM disciplines, was only of marginal importance for most HSS disciplines. Numerous problems had appeared with an open-access system based above all on the availabilities of APCs, which vary greatly in size, but currently mostly run at between £250 and £2000 per article (rising swiftly in some STEM journals). Even RCUK's own figures did not envisage that they could all be paid out of public money. The problem thus emerged of how APCs would be paid for, or, if the money was not available, how they would be rationed inside Universities and other research institutions. So far, national research funders outside the UK have also been primarily interested in green open access routes, although interest in gold in some European countries is growing slowly.[25] In addition, since the great bulk of research articles in HSS are not grant-funded, it was unclear whether APCs would be required for them. If gold were to remain the preferred option, this could be seen to discriminate against anyone who could not get such funding – early-career researchers, retired researchers, most HSS researchers abroad, researchers in Universities with limited research budgets. The very permissive rules for licensing reuse of published work currently required by RCUK have also led to substantial criticism, especially (but not only) in HSS, and these have contributed to what can now be called a 'flight from gold'.[26] HEFCE, as a direct result, announced that it would not prefer either gold or green open access in its future research planning.[27] The British Academy therefore concluded, in common with many other actors in the sector, that in HSS at least (but, in reality, in much of STEM too), improvements to processes leading to green open access were overwhelmingly the most important objective to pursue and get right, especially given that when institutional repositories have previously been available to researchers they have often proved unpopular and little-used. As just noted, gold open access is not by any means marginal in the most grant-dependent STEM subjects; how it might work is of crucial importance for libraries, too (see Chapter 5). The desirability and acceptability of 'pure' open access journals (those funded exclusively by APCs), which are expanding rapidly in number, rather than 'hybrid' ones (those accepting APCs for some articles while maintaining a subscription fee for the others) has remained a hot topic.[28] The question of the need to reduce the level of APCs needed

to sustain journals, and the danger of 'double-dipping', that is to say of a publisher accepting APCs in a hybrid journal but not reducing its price commensurately, have also come to the fore (see Chapter 5). These are, again, debates which will continue. However, it is the Academy's view that very little HSS publishing will be paid for with APCs, and the general issue of how gold open access might and should work was therefore not a part of this project and is discussed only briefly in this Report.

What concerned the British Academy from an early stage was the lack of balance between the heat of the argument about open access and the data available to back it up. In particular, two problems worried us. First, it seemed to us that RCUK and other public bodies were making assumptions about the likely future open access policies of non-UK journals which were based on very little evidence, and that there was thus a danger that the academic sector might find that the UK rules for open access publication accidentally locked UK academics out of international scientific exchange. Second, it concerned us that the assumptions made by public bodies about desirable embargo periods were insufficiently granular between disciplines. Disciplines might vary greatly in the half-lives of their articles (see Chapter 4), and, if they did, the embargo periods proposed by RCUK and the government – and also policy-makers abroad – might not be sufficiently differentiated. Journals in some disciplines might be endangered more than in others if embargo periods were too short, and libraries therefore stopped buying them. This danger greatly concerned many of the subject associations of the different disciplines in the UK, not to speak of the journals themselves.[29] But no-one had undertaken a study as to what these disciplinary half-lives actually were.

It was for this reason that the British Academy in March 2013 proposed to HEFCE that the latter fund a research project to explore these issues. Its terms of reference are set out in Appendix A. The proposal was accepted in May 2013, with a start date in June, and with funding for two research assistants, Rebecca Darley and Daniel Reynolds, who are the co-authors of this Report with Chris Wickham, the Academy's Vice-President for Publications. It is thus a project carried out and written up by a body (the Academy) which has been critical of some aspects of the open access developments in the UK in 2012–13, but paid for by a body (HEFCE)

which has been one of the drivers of those developments. Both parties, however, recognised that accurate data were crucial, whichever side of the debate they favoured. In fact, the data set out in the body of this Report do not support the positions of any side of the debate in full. They are also incomplete; a full study would require much longer, and many more people to accomplish it. But even partial data are more useful than none at all, and what follows is presented in this spirit. It is focussed on three areas of concern: the open access policies of non-UK journals in twelve disciplines in HSS; the difference between the half-lives for journal usage in the same twelve; and on library buying policies for journals which have embraced open access. It does not cover in detail the actual or planned policies of UK-based journals, which have been assumed to be likely to follow government guidelines – although, in fact, they do not always do so.

Notes

1 A good overall summary of the situation up to 2012 is in the Finch report, http://www.researchinfonet.org/wp-content/uploads/2012/06/Finch-Group-report-FINAL-VERSION.pdf, sections 3–5. For later developments, Rita Gardner, 'Open access and learned societies', in N. Vincent and C. Wickham (eds.), *Debating open access* (London, 2013), at http://issuu.com/thebritishacademy/docs/debating_open_access-gardner-open_a. These and all subsequent web references were last accessed between 2 and 6 January 2014.

2 In 2008 the Research Assessment Exercise (RAE), which has subsequently been replaced by the Research Excellence Framework (REF).

3 Private trusts vary considerably in their attitudes to open access, from Wellcome's keen support of the agenda to Leverhulme's careful neutrality: http://www.wellcome.ac.uk/About-us/Policy/Spotlight-issues/Open-access/Policy/index.htm; http://www.leverhulme.ac.uk/funding/OAP.cfm. For HEFCE, see their consultation document, *Consultation on open access in the post-2014 Research Excellence Framework*, available at http://www.hefce.ac.uk/media/hefce/content/pubs/2013/201316/Consultation%20on%20open%20access%20in%20the%20post-2014%20Research%20Excellence%20Framework.pdf, and now their final report, *Policy for open access in the post-2014 Research Excellence Framework*, at http://www.hefce.ac.uk/pubs/year/2014/201407/.

4 Robert Darnton, 'The library: three jeremiads', *The New York review of books*, 23 December 2010, at http://www.nybooks.com/articles/archives/2010/dec/23/library-three-jeremiads/?pagination=false.

5 For data-sets, see in particular the Royal Society report, *Science as an open enterprise* (June 2012), at http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/sape/2012-06-20-SAOE.pdf. The Finch report (above, n. 1), paragraphs 3.12–30, sets out the current situation briefly and well. Data-mining for data-sets and text-mining for articles have slightly different roles in the open access debate, but the arguments are often conflated: see for example Douglas Kell, 'We need open access to unleash text mining's potential', *Research fortnight*, 17 October 2012, available from http://www.researchresearch.com/index.php?option=com_content&view=article&id=16&Itemid=16. A 2012 report for JISC, D. McDonald and U. Kelly, *Value and benefits of text mining*, at http://www.jisc.ac.uk/reports/value-and-benefits-of-text-mining, which is very upbeat about the potential for the text-mining of articles, also makes it clear that we are at present a very long way from doing it effectively. So does HEFCE's *Policy for open access*, cited at n. 3, Annex A.

6 www.rcuk.ac.uk/documents/documents/2005statement.pdf.

7 Following HEFCE figures for the submissions to REF2014, Main Panels C and D (Social Science and Arts/Humanities) as a percentage of the total, http://www.ref.ac.uk/subguide/, published 14 February 2014.

8 See the ERC's 2012 policy at http://erc.europa.eu/sites/default/files/document/file/open_access_policy_researchers_funded_ERC.pdf, backed up by, for example, Science Europe, *Principles for the transition to open access to research publications*, at http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CDMQFjAB&url=http%3A%2F%2Fwww.otka.hu%2Fdownload%3Ffile%3D8faba99592c85f5e03936079deaa00db.f&ei=35fKUrL3D6Kq7Qb2vIGADw&usg=AFQjCNF46xebxBa7VIwtVUdU-3N7uTNiWHA&bvm=bv.58187178,d.bGQ; for the USA, http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf.

9 For the ERC, see http://ec.europa.eu/research/fp7/index_en.cfm?pg=budget.

10 See for example the caution of the submissions of the Royal Society of Chemistry and the Institute of Physics to the Business, Innovation and Skills Parliamentary Select Committee, http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/99/99vw66.htm and http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/99/99vw43.htm.

11 For an ethical argument along these lines see Robin Osborne, 'Why open access makes no sense', in *Debating open access*, at http://issuu.com/thebritishacademy/docs/debating_open_access-osborne-why_op, developed at http://poynder.blogspot.co.uk/2013/12/robin-osborne-on-state-of-open-access.html; this view is in reality widely held, but seldom sees public expression. Daniel Allington, 'On open access, and why it's not the answer', http://www.danielallington.net/2013/10/open-access-why-not-answer/#sthash.6lqxLJ6V.dpbs is a particularly coherent recent discussion here.

12 http://www.jisc.ac.uk/inform/inform37/OpenAccessMonographs.html#.UsWv0TiYbDc summarises options for open-access publication of research monographs, but, while its suggestions are innovative, they also highlight the embryonic stage of this genre of publishing. See further Nigel Vincent, 'The monograph challenge', in *Debating open access*, at http://issuu.com/thebritishacademy/docs/debating_open_access-vincent-the_mo.

13 http://www.rcuk.ac.uk/documents/documents/RCUKOpenAccessPolicy.pdf, p. 4; *Consultation on open access*, cited at n. 3, paragraphs 46–50.

14 See e.g. Kell, 'We need open access', as n. 5.

15 See the arguments in Chris Wickham, 'Open access in the UK and the international environment', in *Debating open access*, at http://issuu.com/thebritishacademy/docs/debating_open_access-wickham-open_a, based on a small initial sample of non-UK journals.

16 See above, n. 1; below, n. 22.

17 Its full title was *Accessibility, sustainability, excellence: how to expand access to research publications*; see above, n. 1. The committee in October 2013 produced an updated report on progress in the subsequent year, also called *Accessibility, sustainability, excellence*, which is a highly sensible reality check on the whole open access agenda as it has developed; it is available at http://www.researchinfonet.org/wp-content/uploads/2013/02/Final-version.pdf.

18 Note that the open access debate is now full of technical terms, such as 'gratis', 'libre', 'platinum' (and perhaps other colours), created to reflect the very various types of open access potentially available. We restrict ourselves to 'gold' and 'green' here, mindful of the fact that even these two are very often used with somewhat divergent meanings.

19 The document in question, *Research Councils UK policy on access to research outputs*, originally dated 17 July 2012, is largely still available at http://www.rcuk.ac.uk/documents/documents/Guidance_for__the_RCUK_policy_on_Access_to_Research_Output.pdf.

20 Rita Gardner, 'Open access and learned societies', as n. 1, summarises the events; http://www.britac.ac.uk/openaccess/debatingopenaccess.cfm, Appendix 2, lists key dates.

21 *Consultation on open access* and *Policy for open access*, cited at n. 3.

22 http://www.parliament.uk/documents/lords-committees/science-technology/Openaccess/OpenAccessevidence.pdf; http://www.publications.parliament.uk/pa/cm201213/cmselect/cmbis/writev/openaccess/contents.htm. See now also the November 2013 responses to the Commons Committee report, the Third Special Report of the 2013–14 session, available at http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/833/83302.htm.

23 http://www.rcuk.ac.uk/documents/documents/RCUKOpenAccessPolicy.pdf.

24 See above, n. 1.

25 See for example the second Finch report (above, n. 17), paragraphs 8.4–8.

26 This Report does not cover the very complex issue of licensing, and the highly controversial nature of the Creative Commons rules, which are the commonest rules for the reuse of published work, particularly the RCUK-preferred CCBY 3.0. See for one reaction to them the British Academy's response to the Commons Select Committee at http://www.publications.parliament.uk/pa/cm201213/cmselect/cmbis/writev/openaccess/m13.htm, paragraphs 10–12, and its verbal submissions (by Chris Wickham), critical of CCBY, at http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/99/130416.htm.

27 *Consultation on open access*, cited at n. 3, paragraph 21.

28 For the growth of gold publishing in STEM disciplines, see Mikael Laakso and Bo-Christer Björk, 'Anatomy of open access publishing: a study of longitudinal development and internal structure', *BMC Medicine* 2012, 10:124 doi:10.1186/1741-7015-10-124, available at http://www.biomedcentral.com/1741-7015/10/124. A much-discussed article, John Bohannon, 'Who's afraid of peer review', *Science*, 4 October 2013: vol. 342, no. 6154, pp. 60–5, available at http://www.sciencemag.org/content/342/6154/60.full, describes an extremely effective sting, a transparently phony article submission in pharmacology which over 60% of 'pure' open access publishers fell for – although *PLoS ONE*, the most prominent generalist scientific open access journal, saw through it. Bohannon replies to critics in an interview on the *Scholarly kitchen* blog, http://scholarlykitchen.sspnet.org/2013/11/12/post-open-access-sting-an-interview-with-john-bohannon/.

29 See for example http://www.royalhistoricalsociety.org/OA%20Information%20Sheet%20RHS%20version%20June%202013%20final.pdf, for History; http://www.psa.ac.uk/sites/default/files/PSA%20submission%20to%20RCUK_Policy%20on%20Open%20Access%20and%20Supporting%20Guidance.pdf for Political Science; http://www.britsoc.co.uk/media/49586/Open_Access_Publishing_a_guide_to_recent_policies_web.pdf for Sociology. See already the Finch report, as above, n. 1, paragraph 7.66, on sharp differences between Computer Science and Mathematics (based however on unpublished data); 9.9–12 made differentiated proposals as a result, which were more open-ended than the RCUK version of them.

2. UK Humanities and Social Science journal publishing and its international face

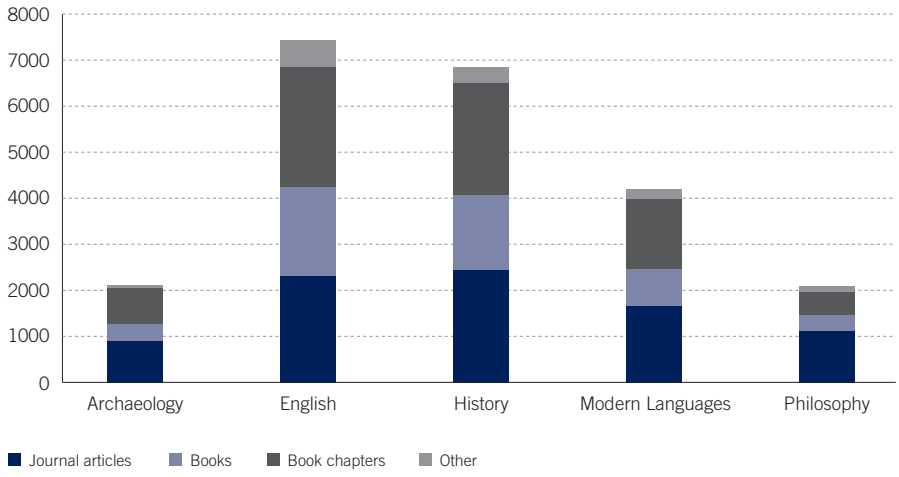
Open access journals in Humanities and Social Science, published 2014 by the British Academy

From the start, so that it did not become unmanageable, this project was envisaged as covering only a sample of HSS disciplines, twelve in all. In Social Science, these are Economics, Geography, Political Science, Psychology and Sociology; in Humanities, Archaeology, English, History, Modern [European] Languages and Philosophy; and, in the Creative Arts, [Fine] Art/Design and Drama. We believe these twelve to be representative of the range of patterns in other disciplines in the HSS area; but anyway they are a substantial proportion of the whole – they cover eleven of the twenty-one HSS sub-panels in REF2014. We have also looked, less systematically, at some STEM disciplines, when discussing half-lives. Chapters 2 to 5 set out the data we compiled, with the help of a large number of individuals and bodies, particularly subject associations, journal editors, publishers and librarians (a list of the people and bodies we wish to thank is in Appendix B). Chapter 6 offers further interpretations, and some suggestions as to where we might go from here.

In order to create a coherent base-line, we studied the entire submission for each of these disciplines from RAE2008: a publicly-available data-set. Here, we simply adopted the sub-panel boundaries from 2008, as these represent fairly well the boundaries chosen by each individual discipline – the only major exception being Modern Languages, which we amalgamated from the French, German Dutch and Scandinavian Languages, Italian, Iberian and Latin American Languages, and Russian Slavonic and East European Languages submissions from 2008.[1] (The next research exercise, REF2014, amalgamates disciplines more. Although clearly more up to date, we could not use it, as it is being submitted while we write this, and the submission lists will not be available for another year.) RAE2008 is, therefore, the basis for the information set out in this chapter and the next. It is best set out in tabular form at the start, before we comment on it.

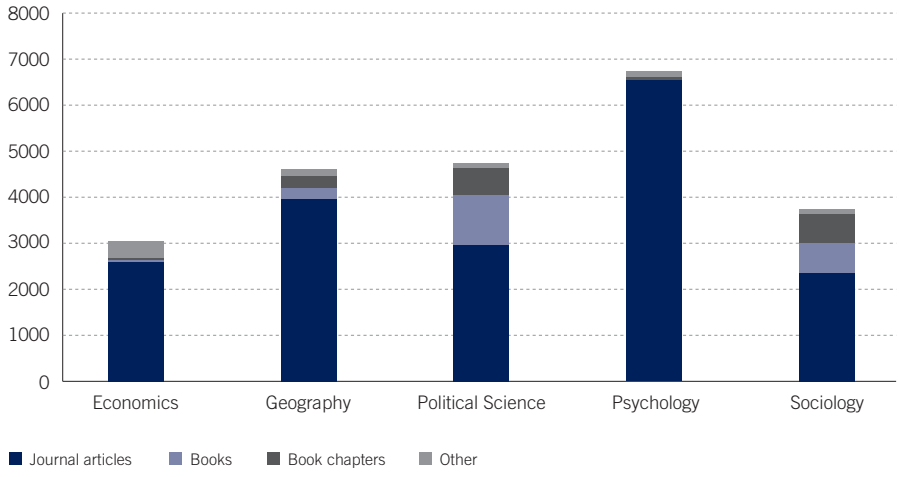
Table 1: Types of submission by discipline in RAE2008

HUMANITIES



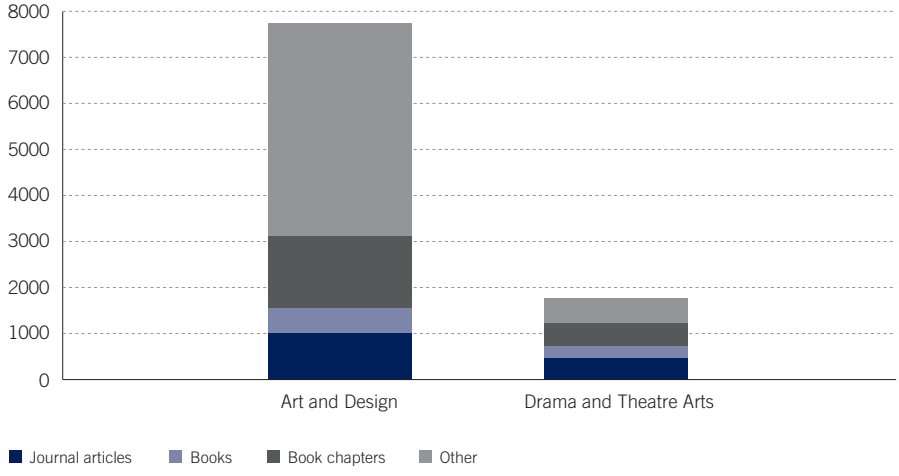
	Number of outputs submitted	Number of journal articles	Number of books	Number of book chapters	Other
Archaeology	2142	906 (42%)	376 (18%)	772 (36%)	88 (4%)
English	7431	2286 (31%)	1905 (26%)	2635 (35%)	602 (8%)
History	6858	2498 (36%)	1665 (24%)	2462 (36%)	331(5%)
Modern Languages	4188	1637 (39%)	805 (19%)	1523 (36%)	216 (5%)
Philosophy	2083	1115 (54%)	326 (16%)	497 (24%)	154 (7%)

SOCIAL SCIENCE



	Number of outputs submitted	Number of journal articles	Number of books	Number of book chapters	Other
Economics	3021	2565 (85%)	21 (1%)	64 (2%)	367 (12%)
Geography	4584	3949 (86%)	214 (5%)	272 (6%)	144 (3%)
Political Science	4708	2819 (60%)	1028 (22%)	573 (12%)	104 (2%)
Psychology	6714	6468 (96%)	28 (0%)	62 (1%)	156 (2%)
Sociology	3729	2356 (63%)	619 (17%)	626 (17%)	126 (3%)

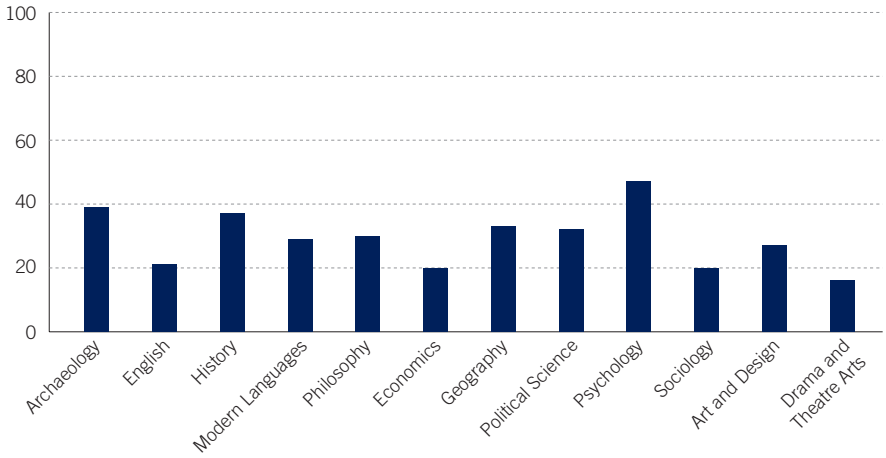
CREATIVE ARTS



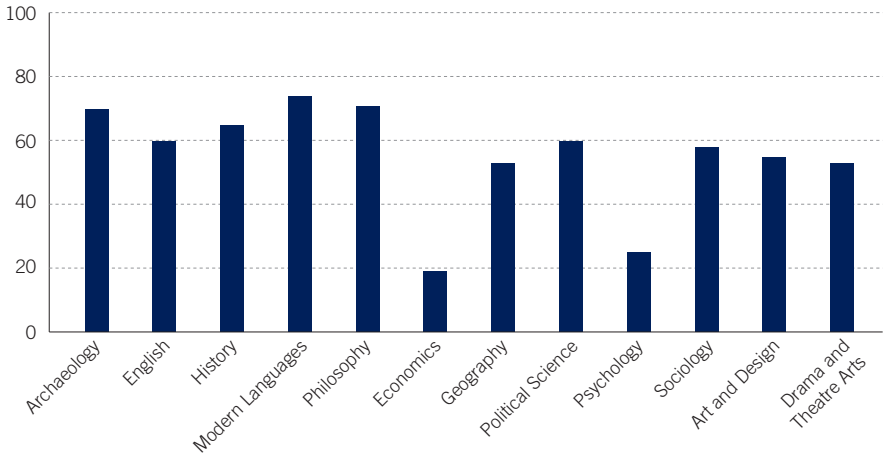
	Number of outputs submitted	Number of journal articles	Number of books	Number of book chapters	Other
Art and Design	7767	1042 (13%)	553 (7%)	1577 (20%)	4592 (59%)
Drama and Theatre Arts	1785	470 (26%)	274 (15%)	501 (28%)	537 (30%)

Table 2: Percentage of journal articles submitted to RAE2008 which were in journals owned by learned societies, inside and outside the UK

Percentage of submissions to journals owned by learned societies

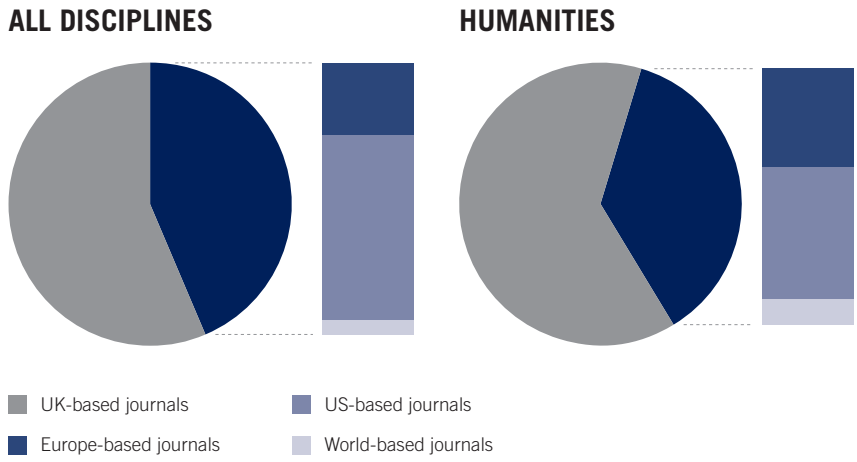


Of submissions to learned-society owned journals, percentage of UK-based learned societies



	Number of journal articles submitted	Number owned by learned societies	Of these, number owned by UK learned societies
HUMANITIES			
Archaeology	906	356 (39%)	289 (70%)
English	2286	475 (21%)	287 (60%)
History	2498	928 (37%)	602 (65%)
Modern Languages	1637	481 (29%)	355 (74%)
Philosophy	1115	332 (30%)	235 (71%)
SOCIAL SCIENCE			
Economics	2565	512 (20%)	96 (19%)
Geography	3949	1294 (33%)	632 (53%)
Political Science	2819	911 (32%)	550 (60%)
Psychology	6468	3024 (47%)	763 (25%)
Sociology	2356	470 (20%)	550 (58%)
CREATIVE ARTS			
Art and Design	1042	277 (27%)	152 (55%)
Drama	470	73 (16%)	39 (53%)

Table 3: Percentages of journal articles submitted to RAE2008 which were published in the UK and outside the UK



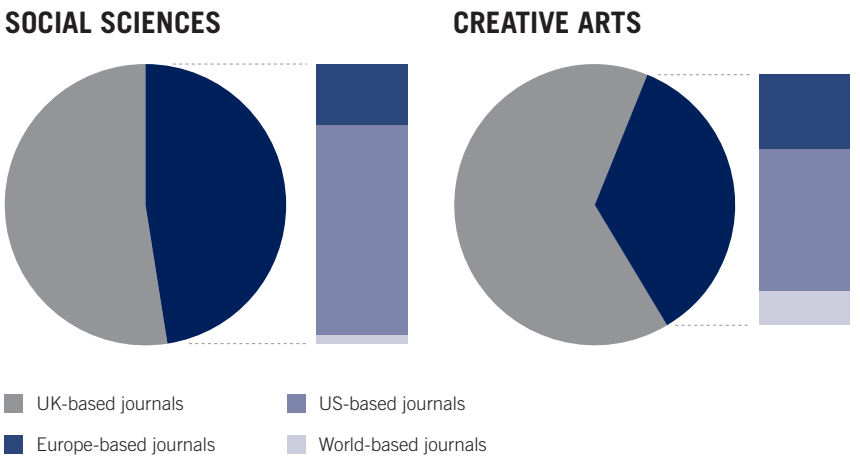
ALL DISCIPLINES

Total number of submissions	Number submitted to journals	UK-based journals	EU-based journals	US-based journals	World-based journals
55110	28100 (51%)	15892 (57%)	3234 (12%)	8372 (30%)	642 (2%)

(NB: the number of journals published jointly in more than one region accounts for some discrepancies between total journal submissions and number of publications by region.)

HUMANITIES

	Total number of submissions	Number submitted to journals	UK-based journals	EU-based journals	US-based journals	World-based journals
HUMANITIES	**22802**	**8444 (37%)**	**5386 (64%)**	**1186 (14%)**	**1596 (19%)**	**307 (4%)**
Archaeology	2142	908 (42%)	(589) 65%	(119) 13%	(187) 21%	(14) 2%
English	7431	2286 (31%)	1400 (61%)	224 (10%)	582 (25%)	109 (5%)
History	6958	2498 (36%)	1807 (72%)	262 (10%)	356 (14%)	72 (3%)
Languages	4188	1637 (39%)	988 (60%)	338 (21%)	225 (14%)	88 (5%)
Philosophy	2083	1115 (54%)	602 (54%)	243 (22%)	246 (22%)	24 (2%)



SOCIAL SCIENCES

	Total number of submissions	Number submitted to journals	UK-based journals	EU-based journals	US-based journals	World-based journals
SOCIAL SCIENCE	**22756**	**18153 (78%)**	**9533 (53%)**	**1890 (10%)**	**6474 (36%)**	**264 (1%)**
Economics	3021	2565 (85%)	1215 (47%)	302 (12%)	1027 (40%)	22 (1%)
Geography	4584	3948 (86%)	2209 (56%)	626 (16%)	1027 (26%)	86 (2%)
Politics	4708	2819 (60%)	2025 (72%)	140 (5%)	580 (21%)	77 (3%)
Psychology	6714	6465 (96%)	2430 (38%)	670 (10%)	3337 (52%)	32 (0.4%)
Sociology	3729	2356 (63%)	1654 (70%)	152 (6%)	503 (21%)	47 (2%)

CREATIVE ARTS

	Total number of submissions	Number submitted to journals	UK-based journals	EU-based journals	US-based journals	World-based journals
CREATIVE ARTS	**9552**	**1503 (16%)**	**973 (65%)**	**158 (11%)**	**302 (20%)**	**71 (5%)**
Art and design	7767	1033 (13%)	633 (61%)	144 (14%)	218 (21%)	39 (4%)
Drama	1785	470 (26%)	340 (72%)	14 (3%)	84 (18%)	32 (7%)

The basic statistical set in Table 1 shows how greatly the respective importance of monographs and journals varies by discipline. We need to recognise, of course, here and later, that the RAE is a self-selected and largely artificial set of submissions, which reflects what people (or their departments) see as their best work, not publishing in general. In disciplines where books are important, for example, the RAE figures (and, now, the REF figures) will increase the apparent proportion of books further, for many people publish well over the four outputs required for the assessment, but will choose their books for assessment in preference to their articles. All the same, the differences between disciplines are still

significant, and it is these differences which we are looking at most closely here; furthermore, even though this is only a survey of what people see as their best work, it also seems to us significant for that reason.

Let us look at some differences, then. In English and History, monographs are a significant proportion of RAE submissions; in Economics and Psychology a trivial one. In the latter two disciplines, together with Geography, journal articles are overwhelmingly the main form of submission (as they are in most STEM disciplines). In Art and Design, at the other extreme, the proportion of journal articles is close to trivial. Indeed, for Art and Design – as also for Drama, where the proportion is higher but the total numbers small – our figures for journal publishing are too low to be robust when we try to analyse them further. We nonetheless include them, here and later, because these are the key data we collected from the Creative Arts. Overall, there was clear water between the percentages of journal articles in the three main blocks of disciplines we looked at: in Social Science, 60–96% of RAE work was published in journals; in Humanities, 31–54%; in the Creative Arts, 13–26%. As to the other elements in this data-set: book chapters add to the number of articles in Humanities and Creative-Arts disciplines far more than they do in Social Science, with the result that the percentage of articles which appear in journals (and thus are subject to current open-access rules) drops substantially in Humanities and the Creative Arts. 'Other' is a miscellaneous and usually fairly small set; it largely includes internet-based publications of various kinds, which are difficult to classify. In the Creative Arts, in particular in Art and Design, it is however much more important, for here it covers art-works, art installations and theatrical productions, which do not fit into the standard forms of print and electronic publication. From here onwards, however, we restrict ourselves entirely to journal articles.

Journals fall, overall, into two main types. Some are wholly owned by publishers, large or small. Others are owned by learned societies, which are generally charities working on a not-for-profit basis; these then either publish their journal in partnership with a publisher, or self-publish. The most notable example of the latter is the American Psychological

Association, which publishes several separate journals, and which influences its discipline in a way no other learned society does in HSS: 12% of all journal articles submitted to RAE2008 in Psychology were published by one of its journals. Some learned societies which have contracted publishing out then keep tight control of the terms of trade for their journal, whereas others are content to let their publisher determine them. This difference has some bearing on the figures presented in Chapter 3.

Table 2 shows the proportion of RAE-submitted articles which were published in learned-society-owned journals. As can be seen, they are nowhere numerically dominant, with percentages ranging mostly between 20 and 40% of the total number of journals (with Drama well below and Psychology well above that range). The figures nonetheless are not trivial; and they gain importance given the fact that in most fields the most popular journals – at any rate, the journals with the highest numbers of submissions in 2008 – tend to show substantially higher percentages of learned-society ownership. (Note that we do not discuss the issue of 'quality'- or 'prestige'-based journal hierarchies in this Report; we are entirely concerned with the quantities of submissions which we identified, our shorthand for which is 'popularity'.) The reactions of learned societies to the open-access agenda are therefore significant. Most of the relevant learned societies are, in addition, UK-based. The figures for almost all disciplines show substantial majorities of UK learned-society journals among the learned-society-published articles in the RAE2008 submission, ranging between 50 and 75%. This means that the majority of learned societies in these disciplines will necessarily have to engage with UK open access policies as these evolve. The only exceptions here are Economics and Psychology, where non-UK learned societies are in the great majority. (For Psychology, this of course correlates with the importance of the American Psychological Association.)

Table 3, finally, shows the proportion of journal articles published abroad in the RAE2008 submissions. These figures are substantial, ranging from around 33% for Humanities to around 48% for Social Science, with Psychology again particularly directed towards the USA. It makes it clear that UK policy-makers cannot ignore non-UK publishing. What

non-UK actors decide to do about open access, which cannot be assumed to be influenced by UK governmental actions, will have significance for academics publishing in UK institutions. Overall, Europe and the USA totally dominate UK publishing abroad in these disciplines at present. The remaining very small percentages of 'rest of the world' journals are mostly published in Australia and Canada. Up to 2008, at least, UK scholars in HSS did not turn to Asia, Africa or Latin America to any extent at all for their journal publishing. Europe (outside the UK) and the USA are, however, more evenly balanced; while most disciplines show a slightly higher tendency towards publishing in the USA, only in a few disciplines is this margin substantial. In our more detailed work on journal open-access policies, discussed in the next chapter, we therefore focussed on these two regions exclusively.

We must stress, however, that it is by no means easy to be sure exactly where a journal is based. When a journal is owned by a learned society we have assumed that it is based in the country of that society. But when it is owned by a publisher, it can be harder to tell. Overall, across the twelve disciplines we studied in HSS, just seven major publishers published a striking 67% of all the journal articles submitted to RAE2008 in the disciplines under study: Cambridge University Press, Elsevier, Oxford University Press, SAGE, Springer, Taylor and Francis, and Wiley-Blackwell. Most of these publishers have UK origins, in whole or in part, but all of them are now multinational, with offices in both the UK and abroad. It cannot be assumed that all Elsevier titles are 'European', whereas all OUP titles are 'British', for example: far from it, in fact. In these numerous cases, we based our calculations on the location of editorial offices and, if these move around, that of current editors and editorial board members, and on the location of the publishers' offices cited on journal websites. We also took advice from experts in individual disciplines, whom we thank in Appendix B. But this was sometimes a judgement call; editorial boards can themselves be highly multinational. (This was particularly so for the division between the UK and the rest of Europe; US journals are usually more easily identifiable. But it should also be added that this may have contributed to making the figures for journals ascribed to Canada, rather than to the USA, artificially low.) It is even the

case that our more detailed enquiries of editorial boards showed us editors who themselves could not say where their journal is based. On the other hand, these were almost always journals whose multinational publishers had quite homogeneous open-access policies; so this uncertainty, however surprising, does not result in an uncertainty about open-access policies and practices, which publishers could tell us about even if journals could not.

In summary: journal publishing by academics in the UK is highly international. (It is probably indeed – although here we did not do the research to demonstrate it – more international than that of any other large European country, and also than that of the USA.) It is not only dangerous, but impossible, for UK public actors to assume that if they persuade UK journals to follow UK procedures, they have succeeded in setting out the overarching journal publishing rules for any discipline. In terms of global scholarly contribution, UK academics punch above their weight: the figure of 4% of world scholars publishing 6–7% of world academic writing has been much quoted.[2] It can, of course, be replied that that leaves 93% of world publishing outside the control of the UK in any respect. But it is also the case that a high proportion of that 7% is itself involved in multinational and world publishing practices. This is, of course, a UK strength, and anything which undermined it would be disastrous. Conversely, the fact that a substantial proportion of involvement in extra-UK publishing practices is mediated by relatively few publishers is itself important. The implications of this will be discussed in the next chapter.

Notes

1 http://www.rae.ac.uk/. Note that the project as set out in Appendix A initially proposed sampling by University here; but we discovered that it was actually easier, as well as more scientifically valuable, to use the whole RAE data-set.

2 E.g. the Finch report, Chapter 1, as n. 1, paragraphs 4.3, 6.16; for further figures, see e.g. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf, pp. 8–10, 32–7.

3. The open access policies of journals outside the UK

Open access journals in Humanities and Social Science, published 2014 by the British Academy

The purpose of this section is for the most part data-collection. Since all disciplines publish a high percentage of their published articles in non-UK journals, as our data demonstrate, it is of crucial importance, given the insistence by UK funders on open-access publishing, to find out how far non-UK journals have adopted or plan to adopt open-access policies. The standard website for discovering the open-access policies of journals is the SHERPA-RoMEO site run by the University of Nottingham; it currently covers 25,273 journals from a wide range of countries.[1] Any site operating on that scale is however dependent on the cooperation of the journals concerned in the updating of policies which have recently in many cases moved very fast. In practice it is therefore frequently out of date, and also often does not give the detailed guidance to open-access policies which we needed. Nor do journal websites (also accessible through the SHERPA-RoMEO site) always help here. We therefore began by approaching journals directly, to discover what their policies were.

Since it was not practical to approach every journal in the twelve disciplines covered by this study, we initially selected for each discipline the ten journals based in the USA which provided the largest number of submissions in each disciplinary sub-panel to RAE2008, plus the ten based in the EU, excluding the UK. (For the problems of determining where journals are based, see the previous chapter; but we also asked the journals themselves, and, when they replied, excluded those which turned out to be more UK- or world-based than we had supposed.) This provided us with a set of journals which are substantially used by UK researchers; only for Drama, whose use of EU journals is very low, with very small numbers of submissions for even the most visible journals, did we consult journals in only one of these two geographical regions, the USA. In addition, since in some disciplines the most submitted-to European journals were overwhelmingly published by two publishers, Elsevier and Springer, in those cases we went to the next ten European journals ranked by their popularity in RAE2008 and consulted them as well. Finally, we asked subject associations in the twelve disciplines if they could give us lists of what they considered to be the major journals in the USA and Europe in their discipline; six did so. The journals they listed sometimes mapped on well to our twenty or thirty, but sometimes did not. We added all those that

did not to our database. We ended up with a list of 350 non-UK journals, the number of which varied from discipline to discipline. This variation, and the heterogeneity of its formation, seemed to us of minor importance, for the key issue here was to determine the policies of those journals which are particularly important to UK researchers in their disciplines.

We wrote to the editors of each of these journals directly, asking them in detail what their current and planned open-access policies were. For French, Italian and Spanish journals we wrote in the relevant language; we used English for Germany and the rest of northern Europe. The results were disappointing: of the 350 chosen journals, only 45 replied inside four months and after prompting, an overall figure of 13%. Of these, many had no idea how to answer our questions, even some of the simplest ones. For some of the more complex questions, such as which licensing policies journals used, we had only a trivial level of response of any kind, and we have not analysed these. We conclude that the level of engagement with the open access debate by many prominent non-UK journals in HSS remains low (in some cases, our letter was the first time editors had even heard of it). It is also highly unlikely that journals with a less developed relationship with UK authors – in particular the large number of journals which each received only a small number of submissions in the RAE2008 data-set – have more engagement than that. This is in itself a negative finding of significance.

Because this response rate produced data significantly lacking in robustness, we backed it up by consulting the four journal publishers which publish the highest percentages of the non-UK journals on our list of 350 (34% in all for this group of journals): Elsevier, SAGE, Springer and Wiley-Blackwell. They were able to tell us for nearly every relevant journal what its open-access policy is, and were, overall, our most consistent source.[2] We finally backed this up with the information available on journal websites, where we had no other source of information (for just over half the journals surveyed). We thus have some data for every journal on our list, and we believe that, despite its flaws, it carries enough weight for it to be possible to generate reliable overall conclusions.

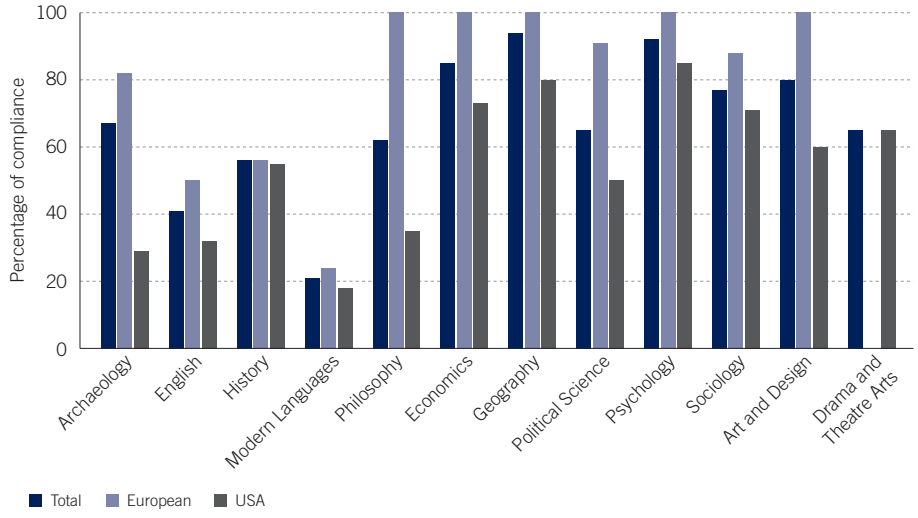
In each case, we concentrated on green open access policies. We counted as 'compliant' with RCUK/HEFCE requirements any journal which allowed authors to post author-accepted manuscripts (AAMs: see p. 17 above) in institutional repositories, with embargo periods of up to 24 months if the journal concerned also offered a gold option. (Note that sometimes journals distinguish between authors' websites, institutional websites, and institutional repositories. It seems to us that, given the ease of linking, this distinction cannot be sustained in the long run; but the difference anyway is often only in the length of the embargo.) In fact, many of these journals allow AAMs to be posted after 12 months, and occasionally at once – even if this may in some cases be a hangover from periods where search engines were less effective, and thus less risky for publishers; embargo periods have in some cases got longer as well as shorter in recent years. In this context, we need to warn readers that 'compliance', although currently increasing, may often become more theoretical than actual, if journal revenue falls and journals (or publishers) readjust their policies accordingly; and above all, as we explore later (p. 71), it is also the case that allowing authors to post AAMs is a very different process from actually getting them to do so. But with this substantial caveat, the data we have are fairly clear.

All the largest-scale publishers currently permit the posting of AAMs in ways that allowed us to count them as 'compliant' on these lists, although not all their journals are owned by them, and not all have adopted their publishers' default policies. Smaller publishers, including the leading US University presses, do so with far less regularity. We do not distinguish between different embargo periods between 0 and 24 months in these tables, although we collected the relevant data. As we discussed the matter with publishers, it became clear that, for many of them, embargo lengths are currently quite fast-moving, so to distinguish between 12 and 24 months would be to provide figures which would soon go out of date. What will probably go out of date less rapidly, however, is the distinction between journals and publishers which were explicitly happy with AAM posting, and those which were not. Although the figures for 'compliance' as set out below may well increase, it is less clear that they will, as a whole, go up very quickly. It must finally be added that some journals and publishers allow the eventual posting of PDFs of the published article as well, but most very firmly do not; this will change

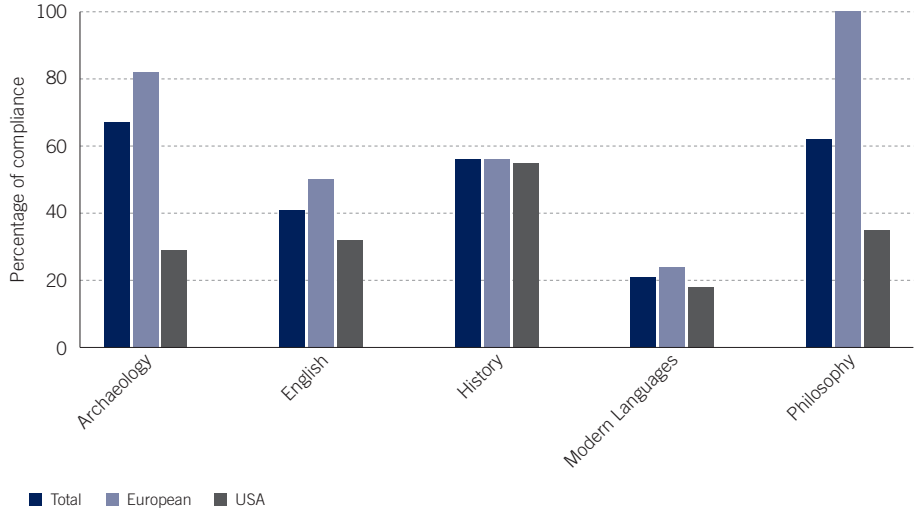
too, but also, in our view, not with any great rapidity, for it is a greater risk to publishers' business models. We collected this data too, but, since this is not a distinction which currently matters to funders, we do not set it out here.

Table 4: Compliance with RCUK/HEFCE open access requirements by non-UK journals

ALL DISCIPLINES

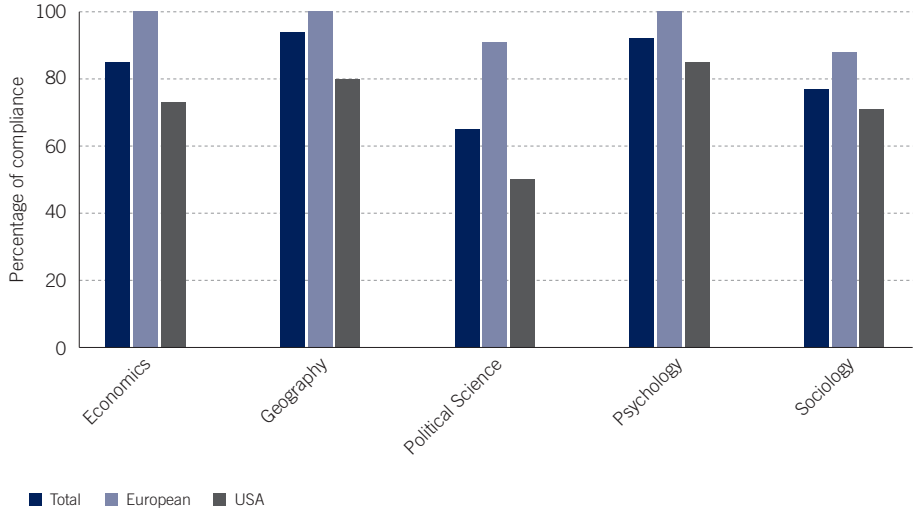


HUMANITIES



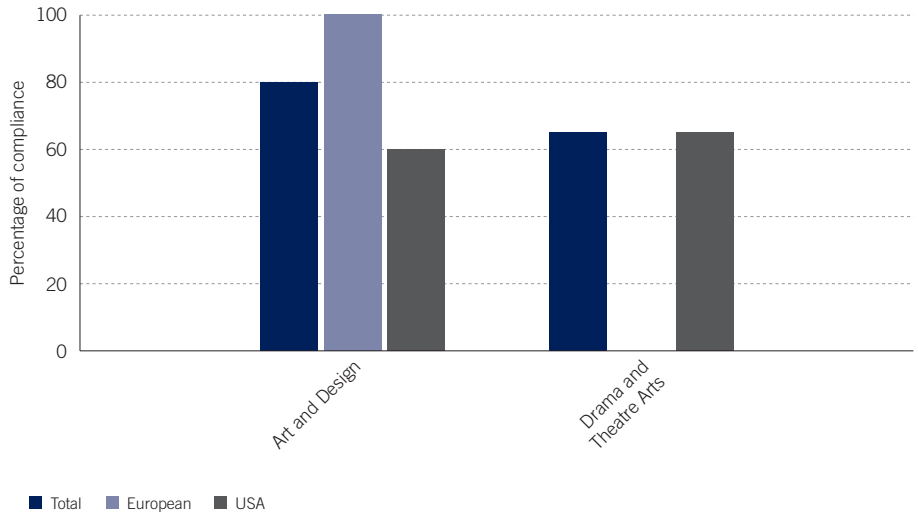
	Number of journals studied	Coverage of non-UK articles submitted to RAE2008	% complying with requirements in:		
			Total	Europe	USA
HUMANITIES	**169**	**32%**	**48**		
Archaeology	24	46%	67	82	29
English	37	24%	41	50	32
History	45	31%	56	56	55
Modern Languages	34	17%	21	24	18
Philosophy	29	59%	62	100	35

SOCIAL SCIENCE



	Number of journals studied	Coverage of non-UK articles submitted to RAE2008	% complying with requirements in:		
			Total	Europe	USA
SOCIAL SCIENCE	**151**	**59%**	**83**		
Economics	26	47%	85	100	73
Geography	33	46%	94	100	80
Political Science	31	27%	65	91	50
Psychology	39	47%	92	100	85
Sociology	22	13%	77	88	71

CREATIVE ARTS



	Number of journals studied	Coverage of non-UK articles submitted to RAE2008	% complying with requirements in:		
			Total	Europe	USA
CREATIVE ARTS	**30**	**15%**	**70**		
Art and Design	10	10%	80	100	60
Drama and Theatre Arts	20	42%	65	Unstudied	65

The patterns which come up in this set of data are as straightforward to analyse as they were arduous to collect. First of all, there is a regular distinction between the European figures and those for the USA, with the US figures in every case lower. This is very largely because the European figures for the journals we studied are in general dominated by the big publishers, despite our efforts to obtain a sample representative of smaller publishers as well, and they have, as already noted, developed (or are now quickly developing) 'compliant' policies for AAM posting; in the USA, this is much less the case. But it is also likely that the USA is less open to the sort of arguments for open access which have been under discussion in Europe over the last year and more; the journals which have not made this choice include some published by very electronically-aware University presses. For them, to judge by their websites, the easy availability (at

least to University users) of JSTOR, EBSCO and MUSE, the big content-providers of HSS journal articles, in many cases clearly substitutes for full open access.

Of the discipline sets, the Creative Arts figures are very low, and cannot be fully relied on; the journals studied in this case represent low absolute numbers of RAE submissions, and, as noted earlier, we could not create a usable data-set for Drama publications in European journals at all. We set them aside in what follows, although the data which we were able to collect are not out of line with the lead figures in the other disciplines.

Of the other two main sets of disciplines, Social Science has a clear profile, shared across all the five disciplines we studied except Politics, which resembles a Humanities discipline in this respect rather more than it matches the other four. The most popular non-UK Social Science journals by a large majority allow the posting of AAMs, reaching the notable height of 94% for Geography, with Psychology and Economics not far behind. These patterns extend across the board, with US journals, and smaller US publishers, almost as content with the procedure as are the big publishers. This favours the conclusion that, had we analysed the policies of every journal in these disciplines in which UK academics published in RAE2008, the figures would not fall far below these. This is reinforced by the fact that the concentration of publishing in major journals, in these three disciplines in particular, meant that we ended up analysing the journals publishing nearly half of all non-UK submissions to RAE2008. The major exception here is Politics, where even the most popular US journals remain 50% non-'compliant'; Politics is also one of the two Social Science disciplines where the spread of publication means that over two thirds of non-UK journals were not covered by our analysis, so its overall 65% 'compliance' figure would doubtless drop somewhat. Sociology, although its most popular non-UK journals show 'compliance' figures nearly as high as Economics, Geography and Psychology, has an even more extreme spread of publications, so that we here collected only a small percentage of the journals making up the RAE total. Among this set, our Sociology figures, although in line with the majority, are therefore the least robust.

Humanities disciplines are however more differentiated. History shows the most even distribution of percentages, with 55–56% of 'compliance' across the board. This is however likely to fall when smaller publishers are considered, in particular in continental Europe, for History as a discipline is very country-specific, and smaller country-specific journals tend to have much less involvement in open access at present; the spread of History publishing means that over two thirds of RAE2008 non-UK journal publishing was not captured, and here we can be reasonably sure that the long 'tail' of journals which publish fewer articles by UK academics are in great part among those less involved in the open access debate. Many of them indeed still only appear in hard copy, not in electronic format at all. Archaeology and Philosophy (plus Politics, which has a similar pattern here) show a sharp distinction between the European figures for 'compliance', which are very high, and those for the USA, which show non-'compliance' as constituting roughly a two-thirds majority. Here, the European figures are artificially high because the most popular journals are in each case mostly published by Elsevier and Springer. When they are not, the percentage falls at once; and we conclude that the US figures, which are more often from smaller publishers, more accurately reflect the field as a whole. (Archaeology and Philosophy have a smaller spread of publishing, so that we captured higher percentages of RAE2008 articles: especially in Philosophy, the most focussed of all the disciplines we studied in this respect.)

The two language-based disciplines, English and Modern Languages, show by far the lowest percentages of 'compliance'; for English, even European journals do not get past 50%, and US non-'compliance' is at two thirds again; in Modern Languages the distinction between the two is less great, but 'compliance' is very low indeed in both. These, especially the latter, are disciplines in which the big publishers are less dominant, and where, in the ranks of journals popular among UK authors, we begin to get relatively small universities in Europe, or niche learned societies, publishing their own journals (which are also, of course, in Modern Languages rarely written in English). Commitment to the open access agenda is not great here, as the replies to our questionnaire showed. In English, and especially in Modern Languages, the spread of journal

publishing is also very high, and in the latter the collected journals only amounted to 17% of the total in RAE2008 terms, the third lowest figure in our set of twelve. As in History, the very wide set of journals with lower UK involvement here come even more firmly from small-scale publishers who have hitherto shown little or no interest in open access, so the low Modern Languages figures (as also those in English) would be likely to be even lower if the full set was studied.

These figures show that there are substantial sectors of Humanities in which the optimistic narratives about the steady increase of open access policies across the world have little traction, and which will, furthermore, not necessarily be more affected by these narratives in the future. Literature-based disciplines in addition face the problem of third-party copyright for the literary texts cited and discussed in articles (as also monographs), which is particularly problematic in the fast-expanding field of 20th- (and now 21st-) century literature: such copyright can become disproportionately expensive to obtain, or indeed impossible, if the journal is published electronically, including for AAMs which are available in repositories. In English, three of the non-UK journals which are most used by UK academic authors in fact still appear in hard copy only; there are plenty of parallels further down the lists. Although we did not study Music, it is highly likely that these observations apply in that discipline too, for it faces similar challenges. There is also no doubt that it applies above all to Art History, in which virtually all the work that researchers discuss, in journal articles as in monographs and other publications, is copyrighted, and very little of it is copyrighted by bodies which have sympathies for open access. There certainly are some open access Art History journals; nevertheless, *Art Bulletin* and *Art History*, major UK/US journals in their field, have no current provision for open access publication – indeed, they have only partial provision for electronic publication itself.[3] Even where journals allow AAMs to be posted, the illustrations sometimes have to be blacked out, which in Art History, in particular, renders them valueless as research tools.

In conclusion. We see three main groups of disciplines here, across Social Sciences and Humanities. In one, Economics, Geography and Psychology,

we find a substantial alignment with current UK public agendas for open access, outside the UK as inside it: three quarters or more of the non-UK journals most popular with UK academics. The statistics for Sociology at first sight make it part of this group too, but they are less robust, and Sociology may fit better with the second group. In that second group, History, Archaeology, Philosophy – with the addition of the less robust figures for Drama, as well as Politics in Social Science (and we could almost certainly add Anthropology, which shows a 'Humanities' profile in its publications) – the figure for 'compliance' is lower, perhaps half of non-UK journals if our expectations about all journals are taken into account, but less than two thirds even if they are not. In a third group, English and Modern Languages, with the addition of Art History and probably Music, figures for non-UK 'compliance' are low, well under a half even for English's headline figures, under a quarter for Modern Languages, with the strong likelihood that these figures would drop considerably if all journals were taken into account.

We have characterised earlier in this chapter the heterogeneity of our evidence-collection, but we believe that our figures, and the contextual conclusions taken from them, are reliable, taken as a whole – except for Art and Design, which we have not discussed at all as a result. They have policy implications.

HEFCE, in its recent proposals for the rules for open-access journal publishing in the next REF, probably to take place in 2020, envisages the 12-month (STEM) to 24-month (HSS) embargo pattern which, with some modifications (see the next chapter), is advocated in this Report; it also suggests brief but clear protocols for exceptions to an overall open-access policy. These latter seem to us helpful, in that they will make it possible for academics to be compliant with HEFCE policy, even with respect to articles published in non-UK journals, in all disciplines (as long as Universities do not misinterpret the rules).[4]

The problem is rather greater with RCUK, whose 24-month policy (itself intended to become a shorter period in the medium term) covers all publications resulting from their grants from April 2013. RCUK has so far not expressed a view as to what effect it thinks this will have on grant-

funded UK academics publishing journal articles abroad. But we can be firm here: it will have a small (even if noticeable) effect on publishing in disciplines such as Economics; it will have a marked effect on disciplines such as History; and it will have an extreme effect on disciplines such as Modern Languages.[5] These are the very serious consequences of a blanket set of rules for HSS open access publishing, such as those RCUK has advocated. Since we do not believe that RCUK wishes to prevent academics from publishing their grant-funded research abroad, we urge that these figures be properly taken into account in its 2014 independent review.

The other half of the equation is however whether 24 months is a sustainable figure for a safe embargo period for HSS, that is to say one which would not result in journals having to close for lack of paying customers, once they can get their research free at the moment when they need it. That is tied into library buying policies, to be discussed in Chapter 5. It has however also been tied very closely, in the often sharp discussions of the last year and a half, with the issue of the difference between the 'half-lives' of individual disciplines. This will be the subject of the next chapter.

Notes

1 http://www.sherpa.ac.uk/romeo/index.php?la=en&fIDnum=|&mode=simple; figures calculated from access on 24 November 2013.

2 See in general http://www.springer.com/open+access/authors+rights?SGWID=0-176704-12-683201-0; http://olabout.wiley.com/WileyCDA/Section/id-817011.html; http://www.elsevier.com/about/open-access/open-access-options; http://www.sagepub.com/journalgateway/pubPolicies.htm; these were backed up by direct and more detailed discussions with each.

3 See http://www.collegeart.org/artbulletin/; http://www.aah.org.uk/art-history. I am very grateful to Genevieve Warwick for her help here. (There are, nonetheless, some new moves to open access publication in Art History, such as http://www.courtauld.ac.uk/researchforum/publications.shtml; it is too soon to say what restrictions these will need to have.)

4 See above, Chapter 1, n. 3. We need to stress, beyond the reactions of University administrations (which at the time of publication, given how recent the HEFCE rules have

themselves been published, cannot yet be known), that the continuation of this likely compliance assumes the continuance of a 24-month embargo period for HSS embargo periods. It also assumes that HEFCE will maintain its explicit neutrality towards different forms of licensing. But we see no signs in current HEFCE statements of plans to change these criteria.

5 This is even more the case with the stringent rules for the ERC set out in 2012 (see above, Chapter 1, n. 8), which demand a 6-month embargo period for all disciplines, and in fact even extend it to monographs. Very few HSS journals, even in Economics, Geography and Psychology, currently fit with that, and in Modern Languages it would risk excluding most applications to the ERC. It does have to be noted that the ERC has had versions of this policy since at least 2007, however; and it is worth repeating that at present HSS gets only 1% of ERC grant money, a percentage which is unlikely to increase, so its effect on the HSS research landscape has not been huge.

4. Journal half-lives and their implications

Open access journals in Humanities and Social Science, published 2014 by the British Academy

There are two kinds of calculations of journal half-lives: citation and usage. Each is based on taking a curve of citation or usage of articles from each journal, which characteristically starts high, when each article is new (though there may also be an initial climb as users become aware of new research), and tails off month by month, with less and less citation or usage across time. Citation half-lives depend on the pacing of the citations of a monograph or article in later publications, across time. Usage half-lives, which could not exist before the electronic age, depend on the downloading of articles from websites, either of publishers or of content providers such as JSTOR or EBSCO. A journal half-life is the content age (see below) which corresponds to half of the volume of usage or citation of articles in the journal at the point of calculation, averaged across all the articles published in the journal. In other words, if the citation or usage of a journal, organised by the date of publication of the article(s) used or cited, is analysed at any given moment, the half-life is the maximum age of the material, calculated backwards from that moment, which half of all users download or half of all users cite in their own work (see Appendix C). Journal half-lives are a useful indicator of the length of time for which journal content remains relevant: thus, the higher the number of months in a journal half-life, the longer the articles in that journal, taken as a whole, have remained significant enough for researchers (or any other readers) to obtain them or cite them.

The reason why we sought to collect half-life data was simple: it is very often argued that disciplines, taken as a whole, have sharp variations in half-lives, because in some disciplines knowledge goes out of date faster. This lies at the heart of the distinction drawn by RCUK, for example, between Biomedicine, the rest of STEM, and HSS: the permitted embargo periods for journals before articles have to be available by green open access are currently, respectively, 6 months, 12 months and 24 months on the basis of these distinctions. These periods in principle assume that researchers need easy access to new work in Medicine much sooner than they necessarily do in, say, Philosophy. These differences in months do not map immediately onto any differentiated half-life calculation, because they are statements, not of the actual usage of research, but of the desirable accessibility of research, which is not directly comparable. Both, however,

assume that there actually are such differences; conversely, these differences have never been studied, unless inside publishing houses and not for public purposes. This chapter thus reports the results of a type of study which had never systematically been made, discipline by discipline, before 2013.

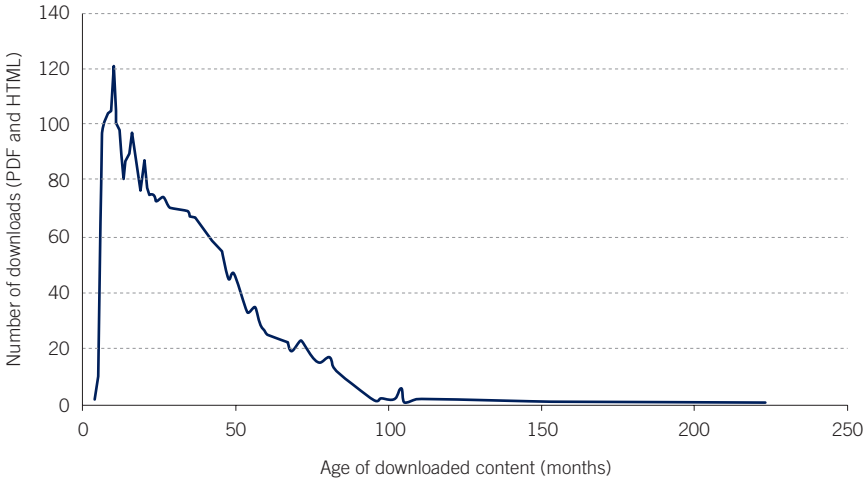
This study is based, for reasons we will set out below, on usage half-lives; we therefore need a clear characterisation of how to calculate them before we start. Half-life is calculated from a specific point in time. This study used data obtained from January 2013 (with some exceptions explained below). Every download of an article made in January 2013 from a specific journal constitutes a single usage figure with a content age worked out from that date.[1] Usage may be measured in any unit of time, but months and years are the two most commonly cited, since they reflected the most common levels of data granulation collected within the publishing industry. Half-lives calculated in months obviously reflect finer-grained distinctions than half-lives calculated in years, and are the preferred half-lives in this study. Thus an article published in January 2012 and downloaded in January 2013 would represent a single usage figure with a content age of 12 months; one published in January 2003 would have a content age of 120 months. These figures can be given for specific articles or for all downloads of every article in a given journal. This study uses the latter to obtain half-lives for journals within each discipline, but it should always be borne in mind that the total half-life for any journal is an agglomeration of usage figures of individual articles. To obtain the half-life for a journal from this download data, the overall content age at which half of total usage for the journal is achieved can be worked out using a calculation of the median content age of the total downloads. In this respect, this study is directly comparable to that of Philip Davis (see below, p. 57), although with a more detailed focus on HSS journals and with other distinctions outlined in this chapter. To build up a picture of a half-life average for each discipline, we took the mean average of each of these half-life calculations, from all the journals under study.

In Appendix C we present a fully worked-out fictional case study to illustrate how usage half-lives are calculated, based on an invented journal, also used later in this study, the *Annual of the Humanities and Social*

Sciences (*AHSS*: a title chosen because, to the best of our knowledge, no such title exists). The parameters of this example (for example the date from which the calculations are made – January 2013) are identical to those of our study, but the figures are entirely fictitious and are not intended to represent either a specific or typical journal in any discipline or group of disciplines. The paragraph and graph that follow are picked up again in Appendix C; they are presented here for the convenience of readers who do not need to know further details of the working involved.

The *AHSS* achieved 2871 article downloads in January 2013. These articles ranged in age from 4 to 223 months (i.e. they had been published between roughly August 1994 and September 2012). All half-life calculations are based on the relationship between volume of usage and the age of the content being used. If the number of downloads of articles published in the *AHSS* is plotted against the age of the content downloaded, usage of the *AHSS* in January 2013 was as follows:

Usage by content age for AHSS (Jan 2013)



The usage figures demonstrate a brief initial gap in usage, and low download figures for content only a couple of months old as the most recent content may not immediately be picked up by researchers. After a few months, however, the content receives the greatest attention by readers, with some minor fluctuations (attributable to a range of factors

including the rhythm of the academic year or particularly positive responses to individual topics or articles in the journal). As content ages it is used less and less often, until usage of the content of this journal falls to very small numbers of downloads, perhaps representing chance finds by readers or the interests of very specific researchers. It is this overall map of usage and content age which can then be used to derive the journal usage half-life, i.e. the measure of how old half of the journal content being downloaded at a given point in time is.

Usage half-lives were not calculated at all systematically until a few years ago; but publishers, particularly larger ones, then began to calculate them from downloads taken from their own websites. What is therefore important for us is that many publishers now have this data, for all disciplines, which can be used comparatively; so do some content providers. Citation half-lives, calculated in a similar way to the usage half-life calculations described above and in Appendix C, are collected internationally in two major publications, *Scopus and Web of knowledge*.[2] For the purposes of HSS, however, these have limited or no use except in a handful of disciplines, for three main reasons: they do not systematically collect data in all Humanities and Social Science disciplines; they essentially collect from journals, and only occasionally from monographs, which are the preferred location of sustained work in many disciplines, especially in Humanities; and they hardly collect from publications not written in English. There are no alternative data-bases of citation half-lives for most of our disciplines. We can thus compare usage half-lives, but not citation half-lives, across the HSS disciplines under discussion here.

Since one of our major concerns in this Report is the study of the differences between disciplines, the fact that we can with available data sources compare usage but cannot similarly compare citation makes our concentration on usage inevitable. The implications of this comparison, however, need to be examined carefully before we start.

Usage half-lives will always produce lower figures than do citation half-lives, for one has to get hold of the article before one reads it, and the publication citing it will be later still, often much later. Research comparing

the figures for journals in two areas of Biomedicine, Oncology and Pharmacology, proposes for those disciplines that usage figures are overall about a third those for citation,[3] and we believe (see also the comments on JSTOR below) that the difference is likely to be far greater in much of HSS. Citation half-lives are probably the concept people have in their minds most clearly when they come to this issue for the first time, and all of us can immediately call to mind the article published many years, often many decades, ago which we return to constantly, and which represents to us the true longevity of relevant research. That is hard to measure statistically (one would have to set that article against all the others in the same issue of the journal which are by now forgotten); but we fully accept the general view that HSS articles go out of date in citation terms much less rapidly than do those in many STEM disciplines. We however also believe that, for the specific purposes of our arguments here, usage half-lives are more valuable than citation, as they capture the period in which the journal is actually being accessed, which is what matters for the business models of journals and publishers. (In the context of the open access debate, they are arguably also more relevant since they reflect a wider pattern of accessing journal publications than simply use by academic authors, which is, by definition, the only use reflected in citation half-lives; usage not only by members of the public but also by students is captured in download figures.)

A more problematic argument against usage half-life calculation is that usage figures are artificially lowered, and also perhaps less differentiated between disciplines, because they only cover the periods for which journals are available electronically. Thus, if a journal's archive is not scanned and made available for download, the still-essential articles from 1970 (or indeed 1870), widely available in hard copy, may not be captured at all. This drawback is being steadily removed as more journal archives are scanned, and there are some journals, often in niche areas, where recorded usage half-lives on publishers' websites are over thirty years. But the problem remains; for this reason, we asked JSTOR, as a prominent archive-based content provider, to provide us with usage evidence for at least some of the journals we studied. As will be seen at the end of this chapter, JSTOR usage half-life figures, although based on fewer journals and not strictly comparable in other respects, are nonetheless considerably

higher than the averages recorded by publishers, which goes some way to showing that our standard usage indicators are, in absolute terms, too low. (Citation half-lives in HSS are therefore likely to be higher still, which backs up the contrast outlined above between STEM and HSS in the difference between citation half-lives and publishers' usage half-lives.) But the differentiation *between* disciplines – a crucial issue for us – in the half-life figures provided by JSTOR is not substantially greater than that provided by publishers, which justifies the focus on these in what follows.

We conducted this study on the basis of the total sample of journals published in the twelve disciplines under review by the six largest publishers of HSS journals – CUP, Elsevier, OUP, SAGE, Taylor and Francis, and Wiley-Blackwell – which together published over 60% of the HSS articles submitted by UK researchers to RAE2008. This restricted our sample to large publishers and also for the most part to English-language journals, but the scale of the sample which could thus be created was sufficiently large – 1108 journals in total – that we felt we could firmly rely on it for the purposes of a report directed to UK readers in the first instance. Anyway, the downloads of the articles can and do come from all over the world. These six publishers all have at least one of their bases in the UK, which facilitated relationships with them, and we met with five of them personally. We have to express our gratitude to all six for their highly positive response, and their willingness to share with us what was in every case highly sensitive commercial information, in order for us to construct tables of individual journals across all six publishers which, were they ever to become public, would have a real commercial impact. (These detailed tables have now been destroyed, and we do not provide any information here which can be ascribed to any single publisher.)

In each case, we selected in the first instance a set of journals for each discipline which fell squarely within the boundaries of that discipline, rather than reflecting interdisciplinary publishing tendencies, so that we could gain the clearest possible idea of the distinctions between each discipline. This became the set on which each publisher ran a half-life calculation, which we here put together in Table 5, our core data-set for this chapter. To regain an interdisciplinary perspective, however, we also

re-divided these same pre-selected journal lists according to which of them had been submitted to each sub-panel in RAE2008, which we here put together in Table 6. Table 5 thus divides out our journal selection by the discipline they can most clearly be identified with, whereas Table 6 divides out by the actual submission strategies of academics in each department – as, for example, with historians submitting to the *Journal of Roman Archaeology*. Finally, as already noted, we consulted one of the major journal content providers, JSTOR, which was as keen to help as were the publishers. Table 7 records the half-lives provided to us by JSTOR. It is based on a much smaller proportion of the same group of journals, 143 in all, as two of our publishers and various journals owned by learned societies were not involved in this part of the study; but we think its results are comparable for some disciplines, and important to set out, to give us an alternative point of view on half-life differences.

We ran the calculation on a month's usage in each case, recording downloads in both HTML and PDF form, selecting January 2013. We needed to choose the same month in each case, as total usage quantities vary substantially across the year. Although it is not clear to us that variation in half-lives correlates with variation in total usage quantities, we had no basis upon which to discount this possibility, and therefore needed to make as certain as we could that we were comparing like with like. This enabled us to combine data from various publishers and to compare across different disciplines. Not all publishers could give us January 2013, so for some we collected January 2012 instead. The figures were comparable, and reflect in any case the same point within the cycle of the academic year. The following bullet-pointed text records some other key issues which we confronted.

- Half-life figures were provided by all six major publishing houses, but in slightly different form. This required some systematization and modification of data to create comparable datasets. In one case data was received having already been anonymized. In other cases the following issues generated occasional difficulty or the need for compromise:
    - Some publishers provided combined usage and half-life figures from HTML and PDF downloads, while others provided separate figures. In the latter case figures were manually averaged to

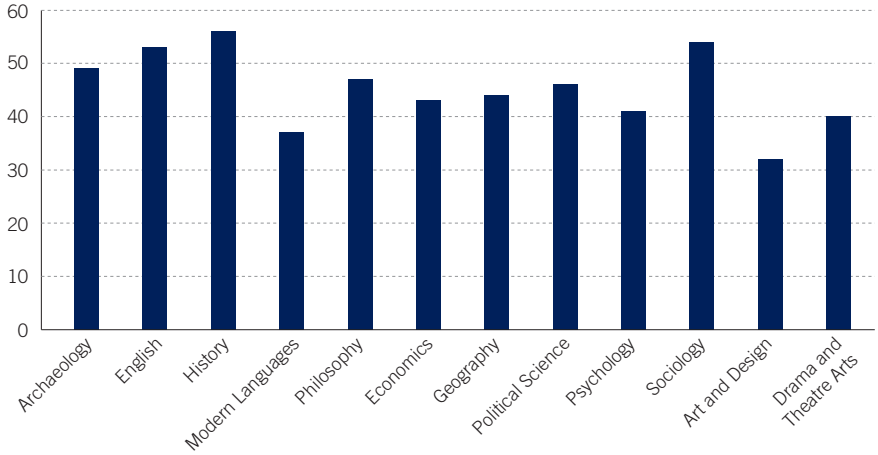
provide a combined figure for each title which could then be compared with the combined data from other publishers.

- Not all publishers provided information about when half-life and usage figures were calculated from and whether they included archive content: that is to say, content for which some publishers charge an additional fee for access, predating a fixed point (different for each publisher, but usually in the late 1990s).
- The first date of publication for each journal title and the year in which it began to be published by its current publisher was also intended to be a part of the dataset, but only one publishing house returned this information and so it was excluded on the grounds that there was insufficient data to develop useful information. Nevertheless, all publishers agreed to exclude from their figures any journal for which their data could only be produced from 2010 or later (whether because the journal is new or newly acquired) in order to avoid distortion of figures.

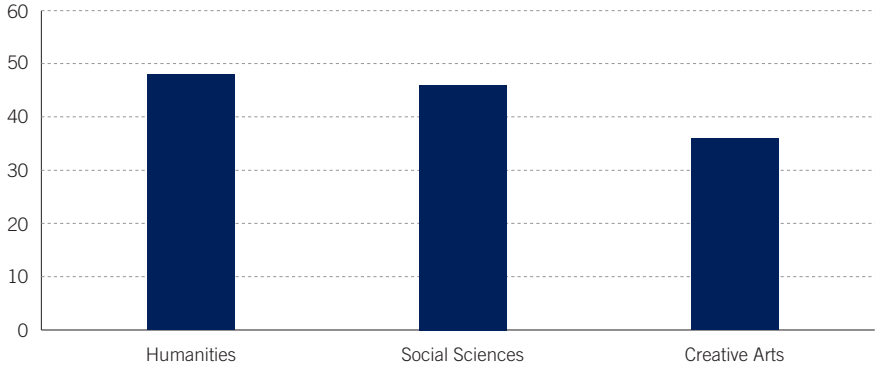
We were also greatly helped by the fact that Dr Philip Davis had, earlier in the summer of 2013, conducted a parallel survey for the Professional and Scholarly Publishing division of the Association of American Publishers, using an almost identical methodology for calculating half-lives. Most of the publishers we dealt with were also among those who had provided him with information, and were used to the methodology. The Davis survey, which was published in December 2013, focussed on journals from STEM as well as HSS, and from thirteen, not six, publishers, and thus compared a wider set than ours. It surveyed 2812 journals, two and a half times the number we surveyed, as a result. But the Davis survey groups the whole of Humanities and the whole of Social Science together (they make up respectively 6% and 30% of his total), so his work is principally important for us in that it allows a comparison between major disciplinary groups, not individual disciplines. (The major difference between this study and his is that contrasts in the quality of the data available to Davis led him to calculate half-lives in years, not months.)[4] His data are nonetheless closely comparable, and allow us to extend our discussions from HSS to STEM disciplines; we do so later in this chapter.

Table 5: Half-lives of journals by discipline, in months

Usage half-life in months by pre-selected discipline



Average half-life in humanities, social sciences and creative arts (averaged from pre-selected disciplines)



	Total journals studied	Half-life (months)
HUMANITIES	**274**	**48 (overall half-life)**
Archaeology	19	49 (95% 5–80)
English	50	53 (95% 15–208)
History	111	56 (95% 7–228)
Modern Languages	33	37 (95% 9–67)
Philosophy	61	47 (95% 6–84)

SOCIAL SCIENCE	**812**	**46 (overall half-life)**
Economics	241	43 (95% 5–95)
Geography	56	44 (95% 21–76)
Politics	167	46 (95% 8–141)
Psychology	257	41 (95% 6–101)
Sociology	91	54 (95% 13–138)
CREATIVE ARTS	**21**	**36 (overall half-life)**
Art and Design	7	32 (95% 11–63)
Drama	14	40 (95% 14–54)

Two comments on these figures need to be made at the outset. First, calculations for three of these disciplines are not based on sufficient raw data to be reliable: Archaeology, and the two disciplines in Creative Arts. The publishing patterns of these three do not happen to include, except marginally, the largest publishers. Modern Languages, too, has relatively low figures. The second point, which was made to us forcibly by publishers and is wholly clear from this summary table, is that the main differences are inside disciplines, not between them. The 95th percentile calculation is created by excluding, out of the total range of journals studied in that discipline, the top and bottom 2.5%, assuming that they are for whatever reason outliers, and then simply listing the highest and lowest half-life figures for journals in each discipline (see Appendix C). The range inside these figures is very great. We do not seek to explain it here (except to say that even a brief study of them shows that 'quality' is only one of several possible variables), but it means that all these figures for total disciplines are mean averages of highly-differentiated sets.

The key point which however emerges from the whole group of disciplines is that the differences between all of them are not so very great. The overall Social Science figure is 46 months; that for Humanities is 48. The highest figures are for History at 56 months, then Sociology and English at 54 and 53; the lowest, apart from the statistically insecure Art and Design figure, is Modern Languages at 37. The difference between 56 and 37 is far from non-existent of course, but most disciplines fall between 40 and 50 months. It is therefore hard to establish any sort of hierarchy of speed of obsolescence, or, otherwise put, continued relevance, between different disciplines inside HSS on the basis of these criteria.

The Davis survey was, as noted above, less fine-grained than this. It did distinguish between Humanities, which it put at between four and five years in half-life terms, i.e. 49–60 months, and Social Science, which it put at between three and four years, i.e. 37–48 months. This is a clear distinction, but actually it would have mapped exactly onto our own figures had the total Humanities figure been one month higher, even though the month-based figures for the two sets were in our case so close. We conclude that the criteria used by Davis are sufficiently close to our own that we can use the rest of his data as comparators for STEM disciplines.

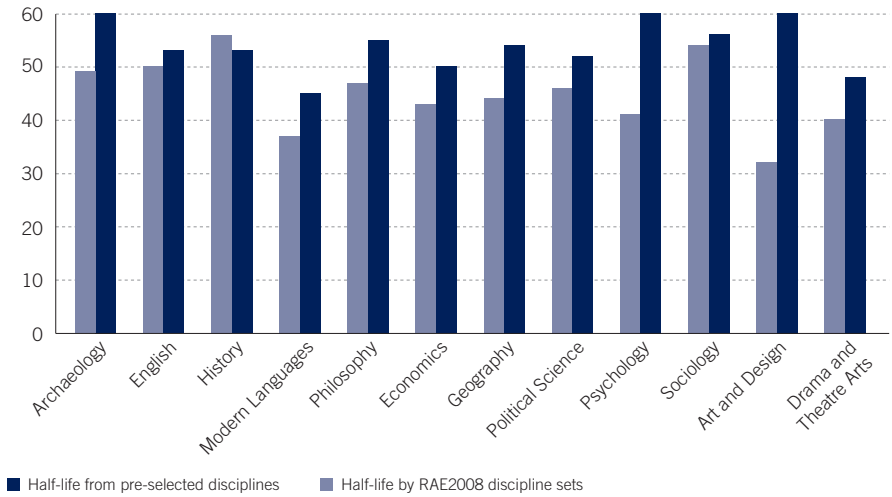
Here the results are equally significant: Physics and Mathematics went with Humanities, at 49–60 months; almost all other disciplines, including Chemistry and Life Sciences, went with Social Sciences. Only Health Sciences (i.e. Medicine) had a lower total half-life, of two to three years, 24–36 months. Gross figures for Chemistry, Physics, Mathematics and Bioscience provided to us by three of our publishers fit that range (average-for-each-publisher half-lives stretching from 38 to 50 months for Chemistry, 38 to 57 for Physics, 41 to a startling 131 for Mathematics, 43 to 80 for Bioscience). It is often claimed that Mathematics has a half-life pattern similar to a Humanities discipline, and that is clearly the case on the basis of these data. It is less often recognised that this is so for Physics too, and that Chemistry and Life Sciences on the Davis figures at least roughly match with Social Science. We think that this is a legitimate conclusion to draw from this set of less granular figures. Only Medicine stands out as being lower in its half-life norms. But these are, at their most distinct, at least half of the norm for higher-half-life disciplines, such as History and Mathematics, and the difference might be smaller.

What are the policy implications of this? There are differences in half-lives, but they are not huge. Actors in the open access debates sometimes say that the differences between (say) Humanities and Life Sciences are extreme; they are rather less extreme than has often been thought. But two other points, we think, stand out. One is that articles in Life Sciences and even Medicine stay current for much longer periods than some open-access advocates believe. It is not, we think, essential to have access

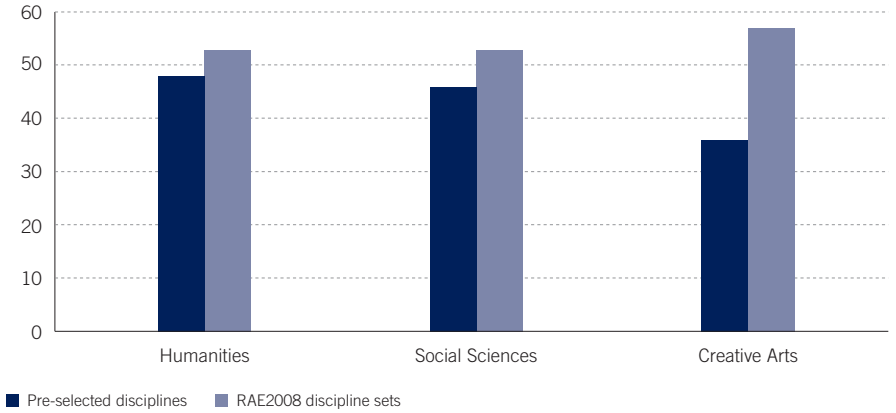
to everything after 6 months to stay in the game, if half-lives even for Medicine are over 24 months. The second point is that a broad difference between Medicine at one end of the scale and Humanities or Mathematics at the other does, roughly, correspond to a two-to-one difference of the sort invoked by advocates of 12-month embargoes for some disciplines and 24 for others. We think that that sort of distinction remains valid. But the boundary does not lie between STEM and HSS; rather, it lies between HSS plus Physical Sciences on one side and Medicine, plus perhaps Life Sciences, on the other. This is where we believe it would be most useful for government bodies to draw the boundary too.[5]

Table 6: Half-lives of selected journals submitted to each RAE2008 sub-panel

Comparison of pre-selected and RAE2008 discipline-set half-lives



Comparison of pre-selected and RAE2008 discipline-set half-lives across HSS and Creative Arts



HUMANITIES	**Overall half-life: 53 months**
Archaeology	60 months
English	53 months
History	53 months
Modern Languages	45 months
Philosophy	55 months
SOCIAL SCIENCE	**Overall half-life: 53 months**
Economics	50 months
Geography	54 months
Politics	52 months
Psychology	60 months
Sociology	56 months
CREATIVE ARTS	**Overall half-life: 57 months**
Art and Design	60 months
Drama	48 months

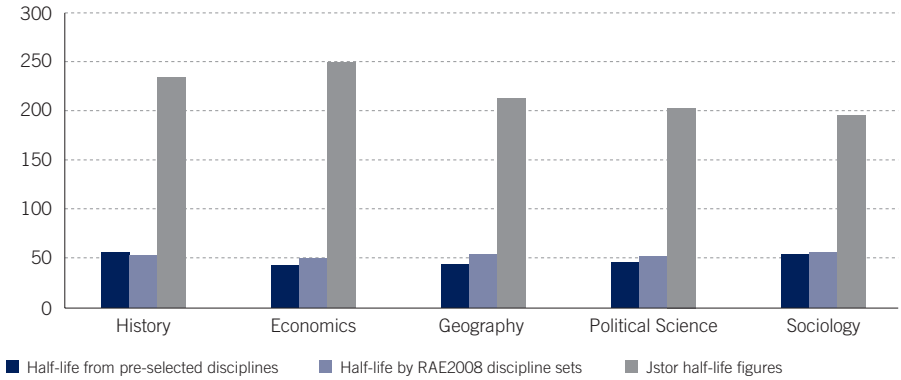
The RAE2008-based half-lives are slightly less differentiated; this must be because the interdisciplinarity which is introduced by following the actual choices of academics in each department across the different Universities and sub-panels lessens the disciplinary differences which we could develop on the basis of the journals which can be unambiguously categorised, as in Table 5. Table 6 does not however correct for the quantity of such cross-submissions (some historians publish in Archaeology or Politics journals, but many more stick to core History ones); this would have required a substantial extra research effort. Had we done so, the differentiations set out here would have been slightly greater, and thus slightly closer to those of Table 5, although, as

we have also seen, those in Table 5 do not show enormous differences either. Overall, Humanities and its range stays close to Social Science and its range.

There are two main differences between Table 5 and Table 6. The first is minor: it is that the highest and lowest figures inside Humanities and Social Science are not in every case the same. Modern Languages remains the discipline with the lowest half-life overall, but, for example, Psychology moves from the lowest on Table 5 to the highest in Table 6 out of the Social Science group. This is less important simply because the differences are, as already noted, small. (We cannot here compare them with the STEM figures, for this calculation has not been done on them.) The second is a more important point: it is that the whole set of half-lives is in almost every case slightly longer than those in Table 5. We attribute this largely to self-selection: many of the journals which publishers gave us figures for, which we consider in Table 5 since they fall clearly into a discipline, have fairly short half-lives, and some of these ended up being cut out to create Table 6 since they were not journals to which people actually submitted articles which they submitted in RAE2008. Journals only founded after 2007 would also, by definition, not be in these tables.

Table 7: Jstor half-life averages from selected journals (in total 143 journals)

Comparison of usage half-life data from Jstor and earlier two data sets (where subject data was available)



	Total (months)	Minimum month average	Sample (number of journals)
OVERALL	**236**	**64**	
HUMANITIES			
History	235	61	34
SOCIAL SCIENCE			
Economics	250	63	23
Geography	214	76	32
Politics	204	48	26
Sociology	196	67	13

The half-life figures which JSTOR generously provided for us, again based on content downloaded in January 2013, show a very different picture in some respects, but a recognisable one in others. Here the smaller sample we had meant that seven of the disciplines under analysis had less than ten journals in the set, and the figures generated from them were not robust enough to cite in a differentiated form. The half-lives in JSTOR are based on archive content above all, and exclude recent issues, which journals / publishers maintain sole rights to; a moving wall is used in each case, later than which content is not available on the site. This is here represented by the second figure in the table, the 'minimum month average', the mean latest month (before January 2013) from which a download was made; but that figure, in particular, represents an average of, at times, very great differences indeed (so the 76 months minimum for Geography is an average of latest months for each journal varying from 162 to 24 months – in each case it depends on the journal's or the publisher's individual policies). What we cannot do is simply subtract the second figure from the first, to produce a form of comparable figure to those in Table 5, for one essential reason: because in a half-life calculation starting from 0 months, i.e. from articles published immediately before the date of downloading, as in Table 5, a very large percentage of the total usable life of each journal has been passed before the archive content is accessible on the JSTOR site. JSTOR picks up, that is to say, only the right-hand half or quarter (and sometimes less) of the curve on p. 52, and, furthermore, according to rules based only on journal policies, not on actual fall-off of use. Our calculations here therefore cannot be made to match those in Table 5, and Table 7 certainly does not imply that 'real' usage half-lives are four to five times higher than publishers' usage half-lives.

Having said that, it is still striking how long these half-lives are. This shows us how long content remains highly relevant to users who can access archive content without limitation: 20 years is normal here, and that is only the half-way point in archive usage. But it is equally clear that there are no major differences between the five disciplines analysed here. If we include all the 143 journals for which we have data, the total half-life average is 236, with a minimum month average of 64: only slightly above the middle of the range of the five disciplines, indicating that the latter are not out of line over all. The JSTOR figures offer us evidence (subject to the caveats already expressed) that the figures of 40–50 months which we have been dealing with up to here are indeed artificially limited by archive availability. But they also show that HSS disciplines are still not at all easy to separate out, even when we have more months to play with.

However we calculate half-lives, therefore, there is not a great differentiation between HSS disciplines. And, when we have an opportunity to compare HSS with STEM figures, the differences are fewer than might be expected. We have argued, on the basis above all of Table 5 and some correlated calculations for STEM disciplines, that there is a rough 2:1 difference between HSS and Physical Science half-lives on one side and those for Medicine on the other. Inside HSS, however, we do not see major divergences.

Notes

1 Our study, like the industry standard Counter system (http://www.projectcounter.org/), which provides a set of parameters for collecting usage figures, uses a combined figure for PDF and HTML downloads of content, wherever this is available.

2 http://www.scopus.com; http://apps.webofknowledge.com.

3 Christian Schloegl and Juan Gorraiz, 'Comparison of citation and usage indicators: the case of oncology journals', Scientometrics 82.3 (2010), pp. 567–580; eidem, 'Global usage versus global citation metrics: the case of pharmacology journals', *Journal of the American Society for Information Science and Technology* 62.1 (2011), pp. 161–170. The latter article shows that in thirty cited Pharmacology journals the range of difference between usage and citation half-lives varies between 1.8 and 4.6 times, with a median at 2.9; so the relation between the two methods of calculation is not direct.

4 For the survey, see http://www.publishers.org/usagestudy/, accessed 19 December 2013; Davis discusses his methodology and some extra caveats in more detail on p. 5 of his report. Note that the 2011 CIBER report, *The journal usage factor*, at http://www.projectcounter.org/documents/CIBER_final_report_July.pdf, which is concerned with establishing a means of calculating and comparing usage of journals within a fixed timeframe, provides some calculations of usage across time, though this was not the primary aim of the report. These usage figures suggest significantly lower half-lives than either Davis or we ourselves have found. They are, however, based on total content usage (editorials, articles and other content). Our data in some cases includes all content since some publishers could not exclude it, but is designed as far as possible to privilege articles, which the CIBER report demonstrates (p. 22) retain higher levels of usage for significantly longer than other types of content. The CIBER report also bases all of its usage calculations on downloads between 2006 and 2009, thereby limiting its usefulness for establishing longer half-life figures, and has quite small samples. The report concludes its analysis of usage over time by commenting that 'The longevity of original research articles and review papers is likely to be longer ... and possibly more highly differentiated between subjects' (p. 23).

5 As the second Finch report, *Accessibility, sustainability, excellence*, as above, Chapter 1, n. 17, p. 30, also hints.

5. The viability of journals in an open-access context

Open access journals in Humanities and Social Science, published 2014 by the British Academy

This chapter has much less of a statistical base. It focusses on University library-buying policies. One of the main fears of the substantial sector of the academic community which is involved in journal editing is that, if journal articles are available to all (which means in every country, not just the UK) after embargo periods which are too short – and all the embargo periods currently canvassed are far lower than the half-life figures discussed in the previous chapter – then too few people might buy the journal, and it might be forced either to close or to radically cut back its activities. Obviously, if this happens to substantial numbers of journals, in any discipline, then at the very least the academic ecosystem will be profoundly altered in often unpredictable ways, and at worst the ability of academics to publish at all will be reduced, for there is no guarantee that new journals, with business models more adapted to survive in the new climate, would replace them. There is no shortage of people who are sure that journals can be run more cheaply; we come back to this issue in Chapter 6. Here, we focus on existing journals, and on the reactions of the people or institutions who buy them; that means at present, overwhelmingly, University libraries. (Personal subscriptions to journals are in most cases very few, and have long been declining; non-University institutional subscriptions to journals are a relatively small minority, particularly in HSS.)

Looked at coldly, journal editors line up with their publishers in being very worried about the effects of open access; librarians, by contrast, are among its keenest advocates, as, among other things, the submissions of library bodies to the UK Parliamentary Committees show.[1] This is largely on ethical grounds, based on the idea that open access to information is a fundamental good, consistent with the purposes for which Universities were created; but it is also linked to the financial argument for open access as discussed in Chapter 1. Librarians have been cutting back on monograph buying for two decades at least, in order to pay ever higher journal prices. They now also find themselves tied into ever more complex consortia deals, in which they get more journals in sets from publishers at discounted prices, but these journals include many which are not needed by the buying institution; these are not always easily separated from the ones which are needed, even though they drive the overall consortium price up. In public and private discussion alike, librarians

are both angry about and suspicious of the present and future pricing policies of publishers, particularly the larger ones; such suspicion is, however, amply repaid by publishers when they discuss the question of how open access will be used by libraries. This climate of mutual distrust affected the project to an extent, for we were, at least initially, seen to be by definition on the side of learned societies, and thus journal editors, and thus publishers. This was not our aim, and we made some effort to dispel librarians' doubts.

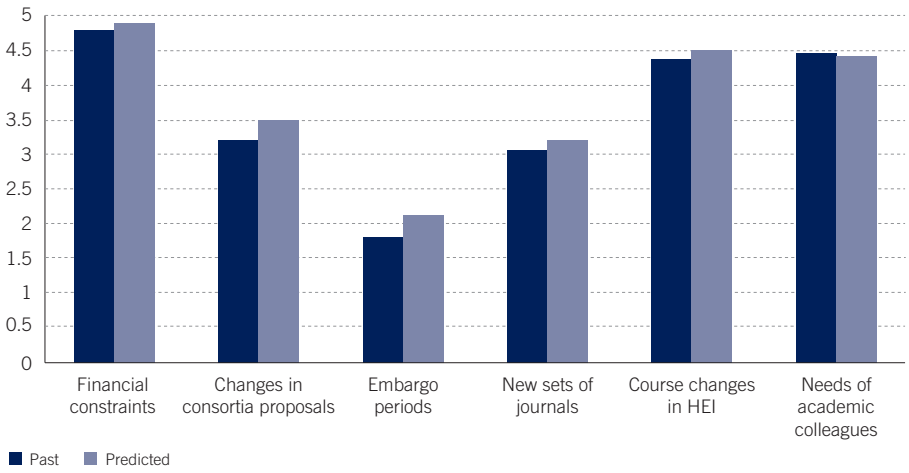
How we could tell what library buying policies actually were, or might be in different open access scenarios, was however not straightforward. We realised only after we began the project that to ask University librarians how they would react in such scenarios would be to ask them to reveal their hand in advance of negotiating sessions with publishers, which we could not reasonably expect. We therefore modified our plans as set out in Appendix A. That cited the research of Linda Bennett, which presented evidence that 23% of librarians might cancel all, and another 42% some, journals in HSS 'if the (majority of) content of research journals was freely available within 6 months of publication' (although this is a situation that may well, in fact, never come about for HSS).[2] We had hoped to get a set of replies to a survey which would allow us to test this research, but we realised that we could not in practice achieve this. Instead, after taking advice from two library bodies, Research Libraries UK and SCONUL, both bodies sent to UK University libraries on our behalf a longer questionnaire, which asked them each to say which of six possible factors (overall financial constraints; changes in publishers' consortia proposals; embargo periods for individual journals or sets of journals; the appearance of new sets of journals; changes in the courses offered by your institution; the needs of academic colleagues) had influenced their choice to cancel journals in the past, and which of the same factors they thought would most likely cause them to cancel journals in the future.

The response-rate from UK libraries was not high (17 respondents, 12% of the total sample, although from a wide range of types of University), but it was firm. In over two thirds of responses, libraries stated that embargo periods had been the least, or second-least, significant factor in

past purchasing decisions, and the percentage was only slightly lower in the case of projected future purchasing choices. Only one University considered embargo periods to be one of the two most significant factors in purchasing decisions. Financial constraints figured highest in almost all cases, with academic needs and course changes nearly as high. There was no significant differentiation here between pre- and post-1992 Universities. This picture of responses has been further reinforced by one-to-one conversations with librarians. From the standpoint of University librarians, their role is simply to serve the needs of academics, to the extent of their financial abilities. The idea that they would ever cancel journals simply because of short embargo periods seemed to them highly unlikely: their University would lose research and teaching ability (as well as status) if it could not get the latest research immediately; also, the constraints of consortia deals made the targeting of individual journals hard to achieve.

Table 8: Library reasons for cancelling journals

(5 is most important, 1 is least important, averaged across total library replies)



Critics might (and do) reply that that is all very well, and doubtless indeed reflects the current views of libraries; but they could point to the nearly one third of this sample of libraries which were more neutral about embargoes, and they could argue that if financial constraints increase, then libraries will have to cut journals somewhere, as they already do, and short

embargo periods might become more important as one of the criteria used to choose where to cut. We cannot say whether this is a founded criticism, as it depends on unpredictable future events. The only certain thing is that if library budgets remain stable or contract, and journal prices increase, fewer journals, chosen by whatever criterion, will be bought – and/or there will be an even more dramatic accentuation of the current trend to reduce monograph spending. But we believe that there are additional reasons why library policies will not be so much affected by embargoes.

We have seen in Chapter 3 that the funding bodies in the UK, both RCUK and HEFCE, have stated that green open access criteria are met if journals allow author-accepted manuscripts (AAMs) to be posted after embargo periods of between 12 and 24 months, for STEM journals and HSS journals respectively, with 6 months for Biomedicine only. These figures are currently set for at least five years: to 2018 for RCUK and probably 2020 for HEFCE. We have also seen that major publishers and some smaller publishers already allow these embargo periods for their journals, although the accessibility of the article as actually published in the journal is much more restricted and in some cases never available. The main recent study of what academics think of the usefulness of open-access AAMs, the large-scale EU-funded PEER project which studied open access practices in disciplines extending from Medicine to Humanities across the period 2008–12, shows that academics are overwhelmingly certain that they also need to have access to the published journal article, at least at the final stage of research – for example, in order to cite a single page in the article rather than the whole text, or else to be sure that the article has not been changed in a significant way during editing, which frequently happens. This finding was stable across all disciplines from Medicine to Humanities, with only Physical Sciences (who use the arXiv repository very extensively) showing a greater preparedness to cite AAMs. That would imply that paid-for access to published articles would continue to be needed, as long as academics thought in this way; if libraries respond to the needs of academics, this is one of those needs. Even if they did not, however, the PEER study also showed that, left to themselves, in the period of study, less than 2% of authors actually posted their AAMs in the project repository at all, even when invited to – again, it is worth stressing,

in all disciplinary areas, not just HSS.[3] This leads to a dilemma for libraries. We discussed the issue with the Association of Research Libraries, a major library association in the USA, which thought that the reasons for US library journal cancellations varied across disciplines, but which confirmed that, as in the UK, such cancellations were not at present primarily associated with embargo periods for AAMs, and were unlikely to be in the future.[4] A lucid recent article on the Association's website, by Ellen Finnie Duranceau, makes the point sufficiently clear that it is worth quoting at length from it.

> **The initial study to determine whether to cancel is cumbersome, expensive.**
>
> First, we have the problem that a wide sampling from any given journal would be required, since author practices in self-archiving vary. This sampling would also have to be repeated regularly, and take in several sample years, since practices will vary over time.
>
> Whoever performs this sampling would have to be trained in recognizing which version of a particular article is posted online, since presumably one wants the peer-reviewed version available to one's faculty, researchers, and students. This would require, in many cases, comparing the manuscript with the version of record (which, please note, is only available to you if you subscribe).
>
> After all the sampling is done and a spreadsheet created, one would have to calculate what percentage of the journal was openly available (and whether that percentage was acceptable – this would have to be a very high number, presumably), and after what time period. This would not be an easy feat, as one has to have numbers representing the total number of articles in order to make the comparison, and as far as I'm aware, this would involve manually tabulating the number of articles in each issue (again possibly through sampling).

Then this information would have to be used in conjunction with other important data such as usage level, faculty interest and feedback, cost, etc. Of course, this whole approach would only be responsible if one had buy-in from the community one is serving. That community would have to believe that this process is reasonable and that the end goal of replacing library journal subscriptions with reliance on authors' self-archived articles is a good one.

The cumbersome, expensive survey would have to be repeated, year after year, and would get harder and harder to administer.

If the decision were taken to cancel the journal, assuming here that the decision rested in significant part on the availability of OA [open-access] manuscripts, then one would also have to have a cycle of returning to those titles to be sure a certain acceptable percentage was still available. This would be necessary because author practices vary and there is no reason at all to assume that because for one year, a good percentage of a journal was OA, that will be true the next year. So it's likely a continuous sampling would be required. We are now talking about a dramatic impact on staff resources, so some other work would need to be stopped or slowed. (And by the way, this assumes the cancellation is likely to free up funds, which, in our package-driven purchasing world, is not always the case.)

But let's assume one does cancel. Then, if one wants to continue to sample post cancellation – as would seem to be necessary – in many cases one would need the version of record to compare with, to be sure one is looking at the peer-reviewed version. Yet this version would not be available once the cancellation had taken place. So staff would be operating without solid information when carrying out future sampling, as it can be difficult to tell a preprint from a postprint without the version of record as a comparison point. […]

> Without considering any philosophical or social goals (no matter how mission-relevant, or noble), and looking just at the practical need of providing key research articles to a community, I do not see a viable workflow that is worth testing even on a trial basis.
>
> This is probably part of the reason you do not hear about libraries canceling journals based on availability of OA manuscripts. I would also guess that if the numbers were run, there would not be any journals to cancel, as author practices in this area are not consistent, and are likely to stay that way for the foreseeable future. [5]

We find this argument entirely convincing. The posting of articles is not consistent, and is also low in percentage terms. If the percentage became higher, as it certainly will – in part because it is now required, at least for UK authors, by RCUK and HEFCE; and, for funded research projects, by other funding bodies abroad – it is still highly unlikely to be consistent across all countries, all authors and all articles. Very few libraries are likely to find that this posting practice, given its inconsistency, is a good reason to cancel core journals. It might be an additional reason to cancel journals on the margin, but these are the journals which are more likely to be cancelled anyway.

It is hard to predict the future, and any such prediction must therefore be very cautious. All the same, we conclude from all this that, as long as embargo periods for AAM posting do not become as low as the 6 months of the Bennett study (we proposed in Chapter 4 that they remain differentiated between 12 months for STEM and 24 months for HSS, to which we advocate adding at least Physics and Mathematics), it is unlikely that open access to AAMs, on their own, will seriously endanger library subscriptions to journals.

This conclusion may reduce the fears of journal editors; but, put another way, it means that UK open access policies may well satisfy much of the ethical justification for open access, but a policy reliant on green open access will do nothing for University library budgets at all. We found in our discussions with UK librarians that they were all well aware of this,

and that they were as a result much more interested in the politics of gold open access. Gold open access is regarded by some activists as 'proper' open access, because it alone allows instant access to publishers' versions of articles. Gold open access also allows publishers to offset some of their costs; this means that they can steadily, as gold uptake increases, bring down the cost of their journals, where these are 'hybrid', i.e. journals which accept APCs to publish some articles in instant open access, but which charge a subscription to cover the cost of the others. Most major and some smaller publishers now say that they intend to lower their prices when gold articles become more numerous. Not to do so is, as we saw earlier, what is now called 'double dipping' – i.e. dipping twice into University budgets, once for the APC for gold access, and then again for the journal subscription. Library activism is focussed currently on reducing the danger of double dipping, and on encouraging publishers to reduce costs for journals as a result, as well as confronting publishers' pricing policies where profit margins are high. As we have seen in Chapter 1, gold access is currently used above all by STEM subjects, which, in areas where research is expensive, rely on grants which include provision for APCs in their overheads (or, in the UK, from direct RCUK funds), and which everywhere can sometimes be sufficiently large that APCs might be a relatively small element of expenditure. We believe that this situation is not likely to change. But it is also in STEM subjects, for the most part, that the really expensive journals are located; so it may well be that gold open access will indeed be of use to library finances in that arena (as long as the money for APCs comes from somewhere other than the same library budgets), even though it is of restricted relevance to most HSS subjects.

The conclusion we come to – not surprisingly, to experts in this field – is therefore that the financial argument for open access indeed focusses on gold access, as the Finch report assumed; but that this argument privileges STEM journals and a library politics based on those journals, and does not affect, to any degree at all, the publishing politics of most HSS disciplines, to which we can add some of the non-grant-based STEM subjects, such as Mathematics. These will continue to rely on green AAM posting; for, even though publishers are likely to increase access to final published versions of articles, most of them are unlikely to make these widely

available on open-access models, unless with rather longer embargo periods. A continuing UK open-access policy which does not privilege either green or gold is not only publicly promised (if sometimes weakly) but seems to us inevitable; in these circumstances, disciplines which do not rely on research grants will continue to focus on green, leaving the politics of gold to grant-based STEM subjects. This green open access is, we believe, less menacing to the traditional publishing ecosystem than is widely feared. This somewhat muddy conclusion might therefore lessen the fears of the HSS sector which the British Academy speaks for, except for those colleagues who see the proliferation of AAMs as being a useless and unwelcome addition to the mass of materials already available on the internet[6] – and, conversely, except for those colleagues whose commitment to open access is based on ethical grounds to the extent that they will not be satisfied by anything other than universal and immediate open access to the most definitive published versions of research. Although the second group is probably less numerous in HSS than the first, we shall try to address some of the issues raised by its arguments in the next chapter.

Notes

1 See above, Chapter 1, n. 22 (in particular http://www.publications.parliament.uk/pa/cm201213/cmselect/cmbis/writev/openaccess/m66.htmin); in the USA, the efforts of Harvard University Library (see for example https://osc.hul.harvard.edu/policies) have also had a national impact.

2 L. Bennett, 'The potential effect of making journals free after a six-month embargo', *Logos* 23:3 (2012), pp.16–27, available at http://www.publishers.org.uk/index.php?option=com_content&view=article&id=2260:the-publishers-association-releases-report-detailing-the-potential-effect-of-making-journals-free-after-a-six-month-embargo&catid=503:pa-press-releases-and-comments&Itemid=1618.

3 http://www.peerproject.eu/fileadmin/media/reports/20120618_PEER_Final_public_report_D9-13.pdf, pp. 10, 13, 18; the study of attitudes to the final published version of articles is discussed in more detail in http://www.peerproject.eu/fileadmin/media/reports/PEER_D4_final_report_29SEPT11.pdf, pp. 16–25. Rather more authors deposit in repositories by their own choice, but not systematically in most cases.

4 Information from Julia Blixrud of the ARL.

5 From Ellen Finnie Duranceau, 'Canceling Green OA Journals: a very expensive way to not save money (while impeding your community's access)', at http://policynotes.arl.org/post/62715845222/canceling-green-oa-journals-a-very-expensive-way-to.

6 Whom we do need to remind that one of the main purposes of open access is to make available research to those who do not have access to University libraries at all.

6. Who should pay for publishing?

Open access journals in Humanities and Social Science, published 2014 by the British Academy

Let us begin here with a thought experiment. Let us take a society-run HSS journal which publishes twenty-five 30-page articles a year, called, once again, the *Annual of Humanities and Social Science*, *AHSS*, and let us suppose that it turns down 75% of the articles it receives, a high but not exceptionally high proportion by current standards of peer review, to maintain its reputation for quality and interdisciplinary commitment. These hundred submissions will need a managing editor and/or a free-lance professional to put them through, to find peer reviewers, to collate reviews, to copy-edit the successful articles, to check figures in some disciplines, and to proof them at a later stage (authors cannot be relied on to be good at proofing) – that is to say, to ensure the scholarly standards of the journal and the quality of the individual articles – as well as to run the rest of the ongoing activities of the journal. Even though academic editors and reviewers characteristically work unpaid, at least in HSS, it is implausible that all the actual running of this journal, something which takes serious time given the way editing works, and given that the popularity of the journal is such that it has a large turn-down rate, could easily be done on the top of another job. Let us suppose that the managing editor, together with the free-lance if used, is paid a total of £30,000 a year – not a high salary for serious work of this kind, but which, with on-costs, comes to £37,000. Let us suppose that s/he works from home and pays no office rent (and takes the incidental costs of such working out of his/her salary), and that £3,000 will be the figure for incidentals – replacement of computers, expenses for travel to see publishers and the like. To this must be added £10,000 for marketing and the maintenance of a webpage which is sufficiently attractive that it adds to the presence of the journal; the marketing could well be contracted out to an external publisher, of course, and usually is. That is to say, given these artificial extra figures, the *AHSS* would require a round £50,000 a year to operate. Who pays, or should pay, for this?

Much of the debate about how publishing can be done more cheaply assumes that much of this can be free. We would argue that this is, in practical terms, fantasy. People can be very enthusiastic about journal publishing, but it is unlikely that enough of them will be prepared to devote their entire spare time (or all their research time) to it for long

enough for there to be a regular turnover of unpaid managing editors and copy-editors in more than a minority of journals, and almost certainly not those with the turn-down rate of the *AHSS*. It is sometimes argued that peer review is unnecessary, but most UK academics would be contemptuous of a journal which did not practice it (and scared where its publications were of life-changing significance, as in Medicine – or Psychology, the HSS subject where this is most likely to be the case). It can be argued that small niche publications are all that is needed in any discipline, and that these can happily be run on a shoestring, but once again this is a minority view, and anyway any of these could grow to replace the role of journals such as the *AHSS* if they gained any reputation at all, which would then again require more commitment than unpaid staff will offer. The view that 'we can do the show right here in the barn' does not work, in fact, for any journal which gains any following; and in any imaginable publishing scenario some journals will achieve that.

Put simply, then, publishing costs non-negligible sums if anyone is employed to do it at all, and, as soon as a journal is visible in the field, it will tend to have to employ someone and to start to cost. Furthermore, in fact, very many journal editors will regard the invented figures we have presented here as in most cases well below likely minima. Many of the most popular journals have more than one employee; employees need a career structure and the possibility of increased pay; very many have offices, and rent needs to be paid; not all editorial boards can work virtually, and expenses mount up if they meet; marketing costs are often higher, and so, above all, are print costs, unless the journal is entirely electronic, which few are, although the figures above assume it. Nor do these figures allow for any surplus, whether this goes to the learned society to support its wider charitable activities for the sector (the support of early-career academics, conferences, and so on), to the journal itself, or to the publisher. To reach the round £50,000, we have used some very conservative, indeed often unrealistic, estimates; we do not consider that they are in themselves useful guidelines for academic publishing. (They are also estimates which would seem ludicrously low to most high-throughput STEM journal editors; but they can, we hope, be seen as a model for the rather higher figures necessary there too.)

If the *AHSS* was a 'pure' gold open-access journal, its twenty-five articles would cost an average of £2000 each in APCs, a high figure for an HSS journal, at the top of the norm even for the most popular journals at present. The figure would, furthermore, have to be considerably higher given that non-UK academics in HSS, and UK academics outside the University system, would rarely have access to APCs, so some provision would have to be made for reducing the costs to these authors. (Such journals, at present almost exclusively operating in STEM subjects, reach lower APC figures by publishing far more articles a year than twenty-five; but, if we assume that quality remains an aim, that is rarely practicable in HSS, even if academics in this sector were regularly to have the money for APCs.) If it was a standard subscription journal, by contrast, 1000 sales would allow the journal to be priced at £50 per year, which is well inside a normal library budget for a journal of this nature.[1] In this case, green open-access posting of author-accepted manuscripts with an embargo period would be necessary for the journal to satisfy research funders. Nevertheless, as we have seen, if the embargo period were fixed at 24 months this would not pose a problem for saleability on current calculations.

It would also be perfectly practicable for gold open access to be added to this, in the 'hybrid' model. If APCs for accepted articles (we assume that the quality controls would not be different for them, which indeed most journals which are now hybrid make explicit, so they would not increase the size of the journal) were priced at the high figure of £2000 each, and 10% of the journal articles had them, then the journal price could come down to £45. If they were priced on the margin, say at £500, then the journal price would not reduce much if the percentage of gold articles remained at 10% – it would remain at nearly £49 – but contributors might become keener to pursue this gold option due to its relative affordability. There would, however, have to be a minimum 40% uptake of gold open access submission at this price to bring the subscription cost back to £45. The journal might well not want this, since, from an advertising perspective, asking subscribers to pay 90% of the journal price to read only 60% additional content (as content published via gold open access would be instantly free in any case) might well lead to customer dissatisfaction.

There are gradations possible here; but, all in all, something closer to a green-dominated subscription model would probably be the cost solution which would upset the fewest players, at least for a relatively cheap HSS journal. What would not be possible, however, would be the reduction of the subscription fee to any lower amount while keeping the quality of the journal at a stable level. Even if the journal relied entirely on unpaid staff (which we have argued is impracticable in the case of any popular journal, such as the *AHSS*), some costs would be incurred, which would have to be paid for by someone. Publishing is thus not free, and cannot be in any realistic pricing model. So, once again, who pays, or should pay, for it?

It is important to recognise that this is an issue which is at its base independent of any version of the open-access debate, which is focussed on access, not costs. There are certainly now journals which publish everything immediately in open-access forms (the Academy publishes one, the *Journal of the British Academy*); but in every case they are subsidised to do so, usually by an academic institution or learned society. Someone pays the costs. The only entirely free mechanism for the dissemination of knowledge would entail abandoning journals entirely, and having all research posted on the internet by the researcher (for even institutional or subject repositories cost money). This is an extreme free-market solution which is at present canvassed by few, but we are happy to predict that even were this post-nuclear landscape to come about, paid-for journals would rapidly re-emerge, because academics (consumers) would be prepared to begin again to pay the money in order to get the quality control of peer-reviewed work. So it needs to be explicit that there is a debate here, less frequently recognised, paralleling but not perfectly matching the debate on open access: that is to say, about the fact that, since research dissemination cannot in practice be free, it is necessary to have a clear idea of who should, both ethically and practically, be expected to pay the costs.

Since this is a debate which has not really taken off, we cannot provide a summary and answers here, but some parameters seem relevant at least to set out.[2] Let us do so through looking at the implications of the three main models for paying for publication which are current in the field.

One current proposition is that authors should pay to publish their own work. This is not purely a product of the rise of gold open access; journals in some fields have for some time had policies of requiring authors to pay submission fees just to have their articles considered, and page or colour charges after acceptance. This is very rare in HSS except in Psychology, however, and has not been favoured by UK funding bodies as a general principle. The ethical presupposition behind this must be that it is authors themselves who benefit most from their research being made public, not the research sector or wider community, so it should be they who support publication financially. That argument is not changed if the author is in an institution, or his/her research is supported by a funder, which is prepared to pay for it; in that case it is the institution/funder which receives at least part of the benefit. Although, obviously, authors do not usually themselves see this process as representing a benefit to them (it is generally simply just one more hurdle to go over, on top of the trials of peer review etc.), in terms of its ethical logic there is a continuum between this and the vanity press – including the latter's most recent incarnation, the predator gold-only journals exposed by, among others, John Bohannon.[3] By contrast, the wider ethical justification of research has traditionally been that it should be for the common good. Even the keenest proponents of author-pays models do not currently reject this latter overarching principle, as far as we can tell. There is thus a contradiction here which arguably outweighs any practical advantage of such a system.

A second proposition is that people who want to use research (consumers) should pay for it, either themselves or via an institution. This is the logic of the subscription fee, the price, for journals (or, by now, for downloads of single articles). It is the oldest model for publishing, of course. Its defence is that it is convenient, which has, for many, been enough to counteract the obvious ethical issue, which is that it presupposes that those who need to use that research can afford it; but many of these people, either researchers or a wider public, or both in poorer countries, cannot do so. This has for a long time been a minor contradiction, at least in the western world, but if journals are very expensive indeed, then on practical grounds it becomes a major and global one.

The third proposition is that, if it is the community as a whole which benefits from that work, it should be the community (whether national or international) which directly subsidises the publication of it. On the face of it, this is the proposition which has greatest ethical coherence, and it also fits the growing view that access to research should indeed be free of cost to consumers. Indirectly, the community already pays for the first two models, where Universities are publicly funded; but if the community wants to make research open access from the start, making its benefit public to all, perhaps the cost of publication should be simply paid for directly out of taxes. This is certainly easy to conceive of in Europe, where most research institutions are indeed essentially public and themselves funded by general taxation. (It is harder in the USA, but that issue is not in our remit.) One already-existing model for it is the admirable SciELO initiative, based in a collective of countries in Latin America, which supports hundreds of open access journals with public funds.[4] Perhaps the community might, under these circumstances, not want to pay for all research publication, but instead only the best. That would follow the logic of the RAE/REF system for distributing government money to Universities, but at least that best work would have its dissemination paid for.

The problems which emerge here are however the practical ones which have bedevilled the whole open-access debate from the start. We set aside the financial and practical issues which immediately appear if 'open access in one country' emerges as a long-term UK public policy (cf. Chapter 3), and concentrate on more structural comments. Unless new taxes are raised to pay for this community subsidy (a frankly unlikely scenario), then money must be found from existing budget allocations; then the question is which, and how. The other two publishing models immediately return here. The gold scenario again raises the ethical contradictions of the author-pays model, unless institutions or individuals are granted extra money to off-set gold fees, which then have to come out of another public budget. (To tell Universities that APCs can be paid out of QR is only another version of the author-pays model, which includes the additional complication that some other aspect of University activity would have to be cut out.) The green scenario does indeed make research available to the community, after some time (although, as we argued in Chapter 4, in practice soon enough), but its practical application

will not have enough effect on library journal-buying to solve the problems of the potential and actual contradictions of the consumer-pays model, as we saw in Chapter 5. The alternative, that journals should simply publish open-to-all at no cost, given that research dissemination is as we have seen not actually free, introduces a further publishing model, which could be called publisher-pays. Since in a free market publishers will only exist if they can at least break even, and in practice make a profit as well, this model is impossible, except where the publisher is a separately-funded charity at least in part devoted to this aim, as the small number of no-cost journal publishers usually are. (It is however a feasible model in the absence of a free market. Much publishing in the Soviet Bloc was indeed so low-cost as to be virtually free, thanks to the fact that large sectors of the publishing world were in effect arms of the state. That is a perfectly possible and indeed potentially ethical model, although not a practical one in our current society.)

Given these practical problems, it is at least not surprising that the open access debate in the UK is where it currently stands, in an uneasy and often un-thought-out compromise between all these solutions. We argued at the end of the last chapter that the current situation is muddy. We conclude now that, in practice, it cannot be other than muddy, although it would help matters if people more regularly realised the implications of their arguments. What we also conclude, however, is that the principal protagonists (and sometimes victims) of this confused situation have to be University libraries, both in the UK and abroad, for they are at the centre of these competing pressures.[5] Libraries are simply parts of higher education institutions, and thus stand for the whole; but it is library staff who have to find the budgets to pay for journals (and indeed monographs), and who face the time-consuming politics around negotiating subscriptions as we move into an open-access world; it may turn out to be libraries which distribute APCs, too, although here individual Universities will differ. It therefore seems to us helpful to end this chapter by suggesting that the problems faced by libraries are the best guide to how the compromise solution, which is all that is possible, might be worked out.

In sum. If research dissemination in useful forms is not free, then paying for it, almost certainly in large part by the consumer-pays model, cannot be

abolished. The issue is then not whether it should be paid for, but how much it should cost. If journal prices are unsustainable in library budgets, then there either have to be fewer journals (libraries intervene in this direction whenever they cancel them) or else journals have to be cheaper. These are pressures which are independent of any open-access policy; all the open access debate has done is throw up more strategies for how journals could be paid for, of which the main new one (cumbersome and contradictory as it is) is APCs. Since journals (which at least have to break even) and thus publishers (which cannot continue unless they are profitable) will continue to exist, the axis on which debate and policy will have to move will continue to be the relationship between libraries and publishers. National public bodies (both in the UK and elsewhere) can intervene in this relationship, but they will essentially do so from the outside. We simply argue that they should recognise this, and as a result focus on facilitating, rather than complicating and confusing, that relationship. We suggest that they should, in addition, not waste too much time trying to put pressure on other third parties (such as academics themselves, in their role as research disseminators) in the hope that they will, somehow and in uncontrollable ways, themselves intervene in the relationship between publishers and libraries. The facilitation of that relationship can most easily be done by recognising its centrality, and then intervening to ensure that the relationship is not based on asymmetric information: given that the size of library budgets is information which is publicly available, publishers, too, need to make their pricing structures and profit margins transparent and justifiable to library buyers, and to the wider academic and general public. This is indeed a direction in which UK government bodies[6] – and some publishers – are, at least sometimes, going, and we applaud the fact. That form of transparency will contribute to cutting through some of the wider debate over this issue, which has too often generated rather more heat than light.

Notes

1 But we must here again stress that these are artificial sums, set out to make calculation easier. Many journals in fact have rather fewer subscribers than this, so the subscription cost would have to be higher; some of the subscriptions would also be at lower cost (to students, or as part of publishers' consortium deals), so that full-price subscriptions would be higher still;

and so on. Instead of £50 for a full-price subscription, we might be looking at £150; all the same, this is still inside most library budgets.

2 But see Allington, 'On open access', cited above, Chapter 1, n. 11, for an important starting-point.

3 See above, Chapter 1, n. 28.

4 http://www.scielo.org/php/index.php?lang=en.

5 Surviving public libraries, by contrast, will have walk-in open access made available to them, paid for by publishers; see e.g. the second Finch report, *Accessibility, sustainability, excellence*, as above, Chapter 1, n. 17, p. 22.

6 Most recently, RCUK's November 2013 response to the BIS Select Committee, http://www.publications.parliament.uk/pa/cm201314/cmselect/cmbis/833/833.pdf, at p. 16.

7. Conclusions

Open access journals in Humanities and Social Science, published 2014 by the British Academy

As we saw in Chapter 1, the open-access debate began with a set of ethical, financial and practical arguments in favour of developing open-access provision; the objections to it have been very largely practical, in terms of the undesired consequences of desired aims. The potential risks of a rush to open access, by whatever means, include the failure of journals which cannot adapt their business models to an open-access landscape and the resultant reduction in the outlets available in which to publish; the weakening of the research support ecosystem associated with learned societies, especially in the UK; and the setting up of barriers to publishing abroad, with the result that the international standing of UK research is undermined.

The purpose of this project has been to investigate some of these potential risks. It has focussed on the degree to which non-UK journals are 'compliant' with current UK open-access policies, discipline by discipline, in twelve disciplines in Humanities and Social Science (HSS); on the differences between journal half-lives across the same disciplines – an important guide to the length of time research stays relevant to other researchers in each; and on library acquisition policies, and the degree to which these are affected by embargoes before articles are openly available. Our research concentrated on 'green' open access, which in most cases involves the self-archiving of manuscripts accepted by journals, after peer review but before editing ('author-accepted manuscripts', AAMs); the British Academy has concluded, as have other actors, that 'gold' open access, the availability of the publisher's final version of an article, usually after the payment of an article processing charge (APC), is going to be unimportant in most HSS disciplines. The most serious risk that is confirmed by the research done for this report is that, in some disciplines at least (see below), UK open-access policies, if followed too rigidly, will indeed undermine the international reach and thus standing of the country's research.

In Chapter 2, the twelve disciplines chosen – in Social Science, Economics, Geography, Political Science, Psychology and Sociology; in Humanities, Archaeology, English, History, Modern [European] Languages and Philosophy; in the Creative Arts, Art/Design and Drama – were

analysed according to the patterns of submission to the 2008 Research Assessment Exercise (RAE) submissions. There are wide differences in these patterns: in particular, monographs are important in most of the Humanities and much less in many of the Social Sciences; and journal articles are overwhelmingly dominant in some of the Social Sciences, notably Economics, Geography and Psychology, whereas they are of minor importance in Art and Design. Between 20% and 40% of journal articles submitted to RAE2008 were in journals published by learned societies, which in all disciplines except Economics and Psychology were in their majority learned societies in the UK. 44% of all journal articles submitted to RAE2008 in these disciplines were published in non-UK journals (overwhelmingly in the USA and Europe), so the decisions of non-UK actors about open access must be recognised to be highly relevant to the UK debate. Conversely, 67% of all submitted journal articles, across all twelve disciplines, whether in UK or non-UK journals, were published by only seven multinational publishers.

In Chapter 3, selected non-UK journals in the USA and Europe, those which had the highest number of submissions in RAE2008 or are regarded as important by subject associations, were analysed in terms of their current (2013) 'compliance' with stated UK green open-access rules for HSS. These have been defined by the UK Research Councils (RCUK) as the granting of permission to post AAMs on institutional repositories with an embargo, for the next five years, of 24 months (in the case of journals which also offer gold open access). The journals concerned have a very wide range of levels of awareness of the open-access agenda, from total ignorance to full 'compliance'. Those owned by the seven major multinational publishers are essentially all 'compliant', although the journals owned by learned societies and published under licence by the same publishers are more diverse in their reactions. In the USA, 'compliance' for the journals studied is for the most part lower than in Europe, for the most popular journals in HSS are less often owned by the big multinational publishers; in Europe, however, a sharp difference is visible between the journals owned by big publishers and those owned by smaller publishers, which are far less likely to be 'compliant'.

Overall, the disciplines studied for this Report fell into three groups. In Economics, Geography and Psychology, and possibly Sociology, current non-UK 'compliance' with RCUK norms is in general very high, over 75% for the most part, and the patterns of our data gave us confidence to predict in most cases (outside Sociology) that this would probably also be the case for the journals which we did not study in detail. In a second group, including History, Archaeology, Philosophy, and probably Politics and Drama (to which we believe we could add Anthropology), documented 'compliance' is lower, at between 50 and 67%, but our contextual data led us to predict that 50% is a likely maximum overall, and maybe less. In a third group, English and Modern Languages (to which we are sure we could add Music and Art History), the levels of compliance of the most popular non-UK journals are between 20% and 40%, and we have good reason to believe that across all journals in this third group the lower figure is by far the most likely. HEFCE has in its consultation for the rules of the next REF, the research assessment exercise due probably in 2020, suggested a set of protocols for both UK and non-UK journal publishing which are likely to make compliance possible if the present pattern of journal submission continues. The current rules for RCUK grant-funded publication, by contrast, at present make non-UK journal publishing in the Humanities very difficult, and in literature/art/music-based disciplines almost impossible. This has serious dangers for the international standing of UK research in the Humanities, and we urge that these figures be properly taken into account in RCUK's 2014 independent review.

In Chapter 4, we analysed usage (download-based) half-lives for eleven of our twelve disciplines (the figures for Art and Design were too low for robust analysis). We chose to study usage rather than citation half-lives, in large part because good comparative data for the former are available for HSS, but for the latter not. The global figures for journals published by six major publishers and provided for us by the publishers concerned, 1108 journals in all, show that usage half-lives do not vary very widely across HSS disciplines; the highest discipline figure was 56 months, the lowest 37, and most were between 40 and 50 months. The major differences are between journals inside the same discipline. The problem with usage half-lives provided by publishers is that they often exclude archive content, so

we asked JSTOR, a major archive-based content-provider, to do a similar analysis. The half-lives for the JSTOR journals, although not directly comparable, are far higher, with an average of 20 years, which shows that archive availability can make journal usage stay current for much longer. They do not vary between discipline, however, any more than publishers' usage half-lives do, so we concluded that we had no grounds for arguing for major disciplinary differences in usage across the studied fields in HSS.

A recent parallel study by Philip Davis, based again on material supplied by publishers, which covered Medical and Physical Sciences (the STEM disciplines) as well as HSS, allowed us to make some comparisons outside HSS as to half-lives. His figures for HSS are broadly comparable to ours; but it is striking that the same is true for the Physical Sciences, particularly Physics and Mathematics – although not Medicine, where usage half-lives are rather shorter (24–36 months). We conclude that a 1:2 differentiation between embargo periods for AAM posting in STEM and HSS, such as the 12 months and 24 months temporarily accepted by RCUK, is justified by these half-life distinctions. But the boundary does not lie between STEM and HSS; rather, it lies between HSS plus Physical Sciences on one side and Medicine on the other. This is where we believe it would be most useful for government bodies to draw the boundary too. It is also worth stressing that, although embargo periods do not map onto usage half-lives very closely, there is little need to be preoccupied by reducing embargo periods to 12 and even 6 months if usage half-lives even for Medicine are over 24 months. We see no reason to change in the future the embargo periods which RCUK currently accepts.

In Chapter 5 we studied University library buying policies and the likely effect of changing embargoes for AAM posting on the acquisition of journals. We found that libraries for the most part thought that embargoes had little effect on their policies (although there is evidence that 6-month embargo periods might have such an effect). In part this was related to the fact that academics, when consulted, in almost all disciplines prefer to have access to publishers' final versions of articles, which are in HSS in most cases not available in open-access forms. In part, it was related to the fact that academics are not consistent in their posting of AAMs, and that

libraries find that journals do not have high enough, or regular enough, percentages of AAMs posted to justify cancellation. Gold open access may have more effect on library budgets – as long as the funds for it are not taken out of the same budgets – but this will affect STEM journals, rather than HSS ones, where green AAM posting will remain the main route for open access used by researchers. But, as long as embargoes remain at 24 months for HSS journals, we conclude that green open access will not have much effect on the buying of journals by libraries. What will have that effect, however, has been and will continue to be the rising cost of journals at a time of budgetary constraint for libraries. If that continues, journals will be cancelled anyway, whether AAMs are available or not.

In Chapter 6, we argued that journal publishing costs money, and cannot be made to be free of cost. If journals are popular, in particular, they will have to employ people to run them, and costs will become considerable immediately. The question is, therefore, an ethical one: who should bear that cost. The use of APCs implies in its ethical logic that the author or his/her funders derive most benefit from publication, which is in contradiction with a general assumption that the community benefits most. Subscription fees imply that consumers benefit most, which is an acceptable view as long as they can afford the fees, which, in an era of rising journal prices, is not any longer the case even in the West, never mind elsewhere. The argument that, as the community as a whole benefits from research, it should bear the direct cost of publication, has the most ethical coherence, but runs against the unlikelihood that, at present, any national community is going to raise extra money in taxes to pay for such publication. These issues are independent of the open-access debate; although all of them can be made to fit into that debate, they must also be faced separately. The result, however, is likely to be a compromise in all cases.

We also conclude that the principal protagonists of this confused situation have to be University libraries, both in the UK and abroad, for they are at the centre of these competing pressures. If journal prices are unsustainable in library budgets, then there either have to be fewer journals or else journals have to be cheaper. These are pressures which are independent of any open-access policy. Since journals and thus publishers

will continue to exist, debate and policy will have to recognise the core relationship between libraries and publishers. Public bodies can intervene in this relationship, but they will essentially do so from the outside. We simply argue that they should recognise this, and as a result focus on facilitating that relationship. This can most easily be done by recognising its centrality, and then intervening to ensure that the relationship is not based on asymmetric information: given that the size of library budgets is information which is publicly available, publishers, too, need to make their pricing structures and profit margins transparent to library buyers. When that produces a stable and agreed situation for journals, as long as proper attention is paid to the international environment, open access will be able to advance further without menacing the current research ecosystem, and we will all benefit.

Appendix A

Terms of reference for the initial research proposal, agreed between the British Academy and HEFCE

Research proposal: Understanding the impact of open access on arts, humanities and social sciences journal publishing

April 2013

Open access journals in Humanities and Social Science, published 2014 by the British Academy

Context

1. The debate about Open Access (OA) has been moving fast since July 2012 and the publication of the Finch Report. Much of this has focussed on the lack of consultation by RCUK, and that debate is, if not over, at least now shelved. In the disciplines included in Humanities and Social Science (HSS), our remit as an Academy, the debate between Gold and Green OA has also lessened somewhat, as it has become clearer that most HSS publishing is most likely to be through Green routes, and as that has by now become acceptable to RCUK.

2. However, much debate has also focussed on the effect that different embargo periods in the Green route will have on learned societies who derive their revenues from journals, and also (a separate debate) the ability of UK academics to publish abroad in an OA- policy dominated world. These two debates are crucial ones for the HSS sector – and also for STEM, it has to be said, although that is not our remit – but they have been characterised by claims on both sides, which have suffered from the absence of proper evidence to back them up.

3. The British Academy therefore proposes a research project, to be undertaken with HEFCE financing, on:
    a. The 'half-lives' of journals, discipline by discipline
    b. The effect that different embargo periods in HSS would have on library acquisition policies
    c. The degree to which different disciplines are involved in non-UK journal publishing, and the degree to which different countries are committed to moves towards OA in different disciplines

4. The benefit for the sector will be a reliable data set – for the first time in HSS – which everyone will be able to use. It will inform policymakers in OA, and universities, learned societies etc seeking to adjust to the OA world. It will contribute to more sustainable OA academic publication.

Organisation

5. The proposed PI of the project will be Professor Chris Wickham, who has expertise and an interest in the successful development of a sustainable OA policy.

6. He will be assisted by two postdoctoral Research Assistants for a total of seven months.

7. The proposed length of the project is 17 June to 16 October 2013.

8. British Academy staff time will be available for management and administration of the project, including liaison with HEFCE.

9. Travel expenses inside the UK will be built into the project.

The project

10. The disciplines covered in the project will be two from the Arts sector, five from Humanities, and five from Social Science. These will be the focus of all the work, and aim to be representative. The disciplines are:
    a. **Arts:** Drama, Fine Art
    b. **Humanities:** History, Modern Languages, Philosophy, Archaeology, English
    c. **Social Science:** Sociology, Political Science, Geography, Economics, Psychology

11. **'Half-lives' of journals.** This section of the project will focus on information on journal downloads taken from six major UK publishers, CUP, OUP, Sage, Taylor and Francis, Wiley-Blackwell, and Elsevier. (If it turns out that the Arts disciplines, for example, used different publishers, this list will of course be extended. However, it is important to have long-standing publishers, for one essential element is a long time-depth.) They will be divided and quantified according to discipline. Exactly what usage of knowledge a study of half-lives shows

is not uncontroversial; but it is at least important that some disciplines have much shorter half-lives than others do, and it is equally important to be sure which is which. If each discipline used interdisciplinary journals on a large scale, they will of course be included, here and later, but only if they are substantially used in the sector.

12. Here, the RAs will contact journals on behalf of the Academy and would seek to gain data through a mixture of sending questionnaires and visiting journal HQs to talk through what was needed with subject editors. All these publishers have shown considerable engagement already with OA and its opportunities and risks.

13. **Library planning.** Here, the focus of the debate has been between the PEER project (http://www.peerproject.eu/reports/), which argued that short embargo periods had no effect on the profitability of journals, and the research reported by Linda Bennett in *Logos* 23:3 (2012), pp.16–27, which presented evidence that very many librarians would cancel most journals in HSS if embargo periods were as short as 6 months. Participants in these debates have talked past each other; and the second study in fact focussed on a situation that may well not come about for HSS.

14. Here, the RAs will put questions to librarians about journal cancellations in HSS if the Green embargo period were either: 12 months, 24 months, 36 months. They will do face-to-face interviews with subject librarians in 30 selected universities in UK, and an email questionnaire to 100 other libraries, plus selected non-UK libraries.

15. **Non-UK journal publishing policies and practices.** The project will create, with the aid of subject associations, a list of the 'top ten' US, and 'top ten' EU, journals by reputation in each discipline. (These two areas will be taken as representative. In HSS, they are overwhelmingly the majority regions of non-UK publishing, in fact. At least France, Germany, Italy, Spain and the Netherlands will be covered. Proper attention will be paid to journals that are published abroad but by a UK-based publisher, or vice versa.) Subject associations will be asked how

important publication outside the UK is regarded as being, whether for reasons of status or of accessibility to target audiences. The project will also check which non-UK journals were actually submitted to in RAE 2008, and what percentages of journal articles were published abroad, in a set of twenty representative departments in each of these disciplines.

16. Here, the RAs will write to all the journals concerned, on behalf of the Academy, in a letter in the relevant language. Questions here will include: policy towards gold; green embargo period; any plans to change this period; any publishers' interest in changing this period; any view concerning CCBY; any reactions to ERC and national RC initiatives (and, of course, UK initiatives) on this; OA rules as to first draft, final post-review draft, or PDF of actual article. (Note that these issues are not all covered in the SHERPA-RoMEO data, and these data are not in fact either recent or reliable – in part, because journal websites are not reliable. Hence the need to contact journal editors directly.)

Appendix B

Acknowledgements

Open access journals in Humanities and Social Science, published 2014 by the British Academy

We are very grateful for help, data, advice and critiques from a long list of people and organisations. First, the steering committee which was set up to manage the project, comprising Nigel Vincent for the British Academy, Dinah Birch, PVC (Research and Knowledge Exchange) at the University of Liverpool, and Rita Gardner, Director of the Royal Geographical Society, whose advice was crucial at all stages. Inside the Academy, too, Vivienne Hurley, Robin Jackson, Alan Palmer and James Rivington, and the members of the Management advisory committee, were essential sounding boards and critics.

As to organisations, we need to thank for their often extensive help the Association of Research Libraries, the British Philosophical Association, the British Psychological Society, the British Sociological Association, Cambridge University Press, the Council for College and University English, the Higher Education Funding Council for England, JSTOR, Oxford University Press, Past and Present, Reed Elsevier, Research Libraries UK, the Royal Geographical Society, the Royal Historical Society, SAGE, the Society of College, National and University Libraries, Springer-Verlag, the Standing Conference of University Drama Departments, Taylor and Francis, Wiley-Blackwell. And also all the journals and libraries which responded to our surveys.

As to individuals – some of them members of the abovenamed organisations, some not – we are very grateful indeed to the following list of people, some of whom did a large amount of work to further this project. It is more necessary than usual to say that they are not responsible for the content of this Report, and indeed very few of them will agree with all our conclusions in a contested field such as this. Mayur Amin, Ian Bannerman, Tim Barton, Anna Bayman, Suzanne Blier, Julia Blixrud, Michael Brady, Bruce Brown, Laura Brown, Leslie Brubaker, Stella Butler, Lucille Cairns, Philip Carpenter, Barbara Chin, Jim Coleman, Iain Craig, Joanna Cross, David Crotty, Alison Danforth, Helena Djurkovic, David Duff, Richard Fisher, Simon Frith, Kimberley Hackett, James Hardcastle, Madeleine Hatfield, Cecilia Heyes, Carol Higgins, Mandy Hill, Isabel Holowaty, Karen Jackson, Rhodri Jackson, Ben Johnson, Colin Jones, Michael Jubb, Maja Kominko, Stephen Lacey, Peter Mandler, Ziyad Marar,

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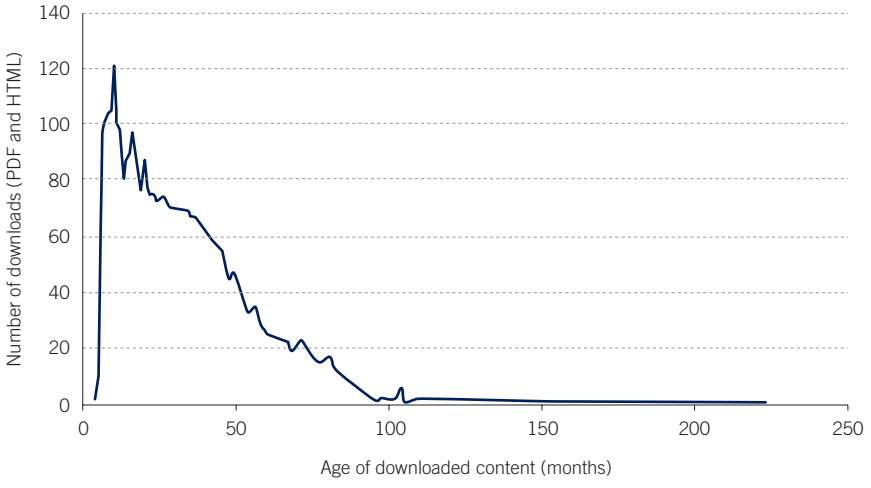
Appendix C

Usage half-life calculations

Open access journals in Humanities and Social Science, published 2014 by the British Academy

Half-life calculations are often presented in the open access debate as graphics or pre-worked figures, but the methods lying behind these are obscure to many who use them. The definition of half-life is complicated by the fact that the material used to generate such figures is usually commercially sensitive and so not publicly available (as indeed, is the case with the half-life figures provided for this study). It is, therefore, difficult for readers to query or work through methods. The fictional case study of the *Annual of the Humanities and Social Sciences (AHSS)* is intended to offer a brief step-by-step guide to how half-life calculations are derived and how they relate to journal usage. What follows therefore includes explanations of calculations (such as calculations of percentage) which will be straightforward and familiar to most people. It also does not explore in detail the ways in which these calculations may be done most efficiently, e.g. using various software applications. Rather, it presents the underlying mathematical process by which half-lives are derived as systematically as possible.

The *AHSS* achieved 2871 article downloads in January 2013. These articles ranged in age from 4 to 223 months (i.e. they had been published between roughly August 1994 and September 2012). All half-life calculations are based on the relationship between volume of usage and the age of the content being used. If the number of downloads of articles published in the *AHSS* is plotted against the age of the content downloaded, usage of the *AHSS* in January 2013 was as follows:



The usage figures demonstrate a brief initial gap in usage, and low download figures for content only a couple of months old as the most recent content may not immediately be picked up by researchers. After a few months, however, content receives the greatest attention by readers, with some minor fluctuations (attributable to a range of factors including the rhythm of the academic year or particularly positive responses to individual topics or articles in the journal). As content ages it is used less and less often, until usage of the content of this journal falls to very small numbers of downloads, perhaps representing chance finds by readers or the interests of very specific researchers. The usage by content age of the *AHSS* also illustrates a small spike at 104 months (i.e. content published in July 2004). This can occur in usage figures when, for example, an article in a given field has acquired seminal importance or publishes evidence no longer available or for some other reason remains relevant to a large number of researchers long after its publication date. This map of usage and content age can then be used to derive the journal half-life, i.e. the measure of how old half of the journal content being used at a given point in time is. This is derived by calculating the median content age of half of the total volume of downloads.

Median half-life

The median half-life determines the point at which, if content age is arranged in chronological order (i.e. usage for most recent material placed first, with older content and its usage following), 50% of total usage is reached. It can most easily be calculated and visualised by expressing the usage figures cumulatively and as a percentage of total usage, thus (to take only the first few months of usage of the *AHSS* to demonstrate the method:

Age of content downloaded (in months, most recent first)	Usage (number of downloads of content of this age in Jan 2013)	Cumulative usage (usage up to and including content of the age specified in column 1)	Percentage of total usage represented by cumulative usage (i.e. cumulative usage /2871 x 100)
4	2	2	0.06%
5	11	13	0.45%
6	92	105	3.66%
7	101	206	7.18%
8	104	310	10.8%

9	105	415	14.45%
10	121	536	18.67%
11	101	637	22.19%
12	97	734	25.57%
13	80	814	28.35%
14	87	901	31.38%
15	90	991	34.52%
16	97	1088	37.9%
19	76	1164	40.54%
20	88	1252	43.61%
21	77	1329	46.29%
22	75	1404	48.9%
23	75	1479	51.51%
24	73	1552	54.061%

As the median half-life is the content age at which 50% of usage was reached, in the case of the *AHSS* the median half-life is 23 months. (Alternatively, this can be calculated by halving the total usage figure then establishing the content age at which the appropriate number of downloads is reached. In this case, half of total downloads is 1436, i.e. giving the median half-life of 23 months.)

95th percentile

In discussions of half-life, the 95th percentile of usage is also often given. This relates directly to usage figures and is intended to exclude outliers, thereby providing a core range of content age from which downloads are derived. It is derived by calculating the top and bottom 2.5% of the content ages represented, then excluding these. In this study this has been achieved by calculating how many different content ages are represented; since in many cases content from each month of a journal's life will not have been accessed, this does not necessarily correspond to the maximum age in months of the oldest downloaded material. In the current case study, 63 content ages are represented by downloads made in January 2013. 5% of the content ages presented come to 7.9 (i.e. 8), so, once the highest and lowest four of the content ages represented have been removed, we are left with a 95th percentile usage figure for the *AHSS* of 8–109 months.

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